

THE EFFECT OF THE ARTIFICIAL INTELLIGENCE ON LEARNING QUALITY & PRACTICES IN HIGHER EDUCATION

¹Rajesh. E, ²Dr. Shreevamshi, ³Dr. Varsha Nitin Deshmukh, ⁴Dr. Somanchi Hari Krishna, ⁵Lakshmana Phaneendra Maguluri

¹Assistant Professor in Special Education, School of Behavioural Sciences, Mahatma Gandhi University, Priyadarsini Hills P.O, Kottayam, Kerala

²Associate Professor, PES University, Bengaluru, Karnataka, India

³Principal, Dr Panjabrao Deshmukh College of law Amravati, Maharashtra (Affiliated to SGBAU Amravati University)

⁴Associate Professor, Department of Business Management, Vignana Bharathi Institute of Technology, Aushapur Village Ghatkesar Mandal Medichal Malkajigiri, Telangana

⁵Assistant Professor, Department of Computer Science and Engineering, Koneru Lakshmaiah Education Foundation, Green Fields, Vaddeswaram, Andhra Pradesh

Abstract

The study has provided the background of the research, and jotted down the major research questions and research objectives which here to be approached in the study. Artificial intelligence helps to develop professional and personal skills that are required for the development of an organization. The learning systems use this technique to increase the efficiency and productivity of students as per the necessity of students. During the Covid and post Covid situation, online learning has become one of the most important mediums of education to continue the education along with skill development. It develops problem solving skills of students by enhancing the quality of mind. A secondary qualitative method has been followed in this study to develop knowledge with the help of existing articles that are important and peer-reviewed. Thematic analysis has been developed by reviewing the qualities of the article that are included within the research process to check the importance of artificial intelligence in higher education.

Keywords: Artificial Intelligence, Cognitive Skills, Learning Process, Higher Education, Problem-Solving Skills, Quality, Practices.

INTRODUCTION

With the improvement of science and technology, there has been a drastic spread in the various aspects of information technology in the heart of the society. The impact of such a sector has improved the notions of data automation and data analysis. Artificial Intelligence (AI), Cloud Computing, Big Data and similar others have improved the quality of life. The chapter would reflect upon the background of the study, with the inclusion of research objectives and research questions.

Research Objectives

The research objectives of the study are as follows:

- To inspect the spread of Artificial Intelligence (AI) on educational field
- To examine the incorporation of AI for improving the learning quality and practices
- To analyse the advantages and disadvantages for the integration of AI in education

Research questions

The research questions for the study are as follows:

RQ1: In what manner has AI proliferated in the field of education?

RQ2: How has the incorporation of AI improved the learning quality and practices?

RQ3: What are the various advantages and disadvantages for the integration of AI in education?

Background

The usage of AI in the education structure has been drastically increasing. As opined by Perrotta & Selwyn (2020), the integration has been beneficial for predicting the issues in future and improving the efficiency of the students.

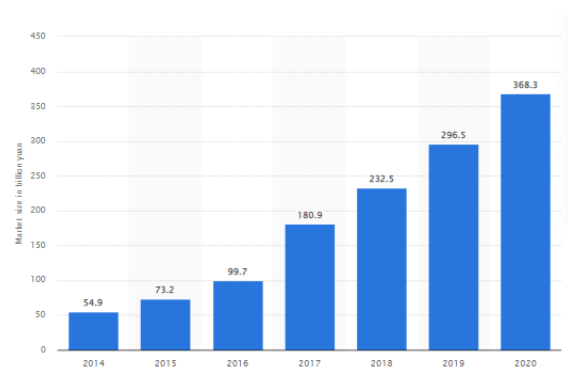


Figure 1: *Usage of Artificial intelligence (AI) for online education market in China from 2014 to 2020*

(Source: Statista, 2021)

With the presence of such a high quality instruction providing technology, the system has been used for altering the teachers, especially for the weaker section of students. According to the findings by Williamson & Eynon (2020), technologies for detecting plagiarism, maintaining exam integrity, analysing the metrics of the students, and similar others are being used. Hence, with the maintenance of such tools, the modes for assessing the students have been extremely useful.

LITERATURE REVIEW

Artificial intelligence

The term artificial intelligence can be described as the effect of human intelligence in terms of different software applications that are programmed in such a way that the software applications can think of human beings and can easily copy human action. Artificial intelligence is also associated with the human mind in terms of using a particular way how the human beings think and learn the problem and after that find a way to solve the problem (Holmes et al. 2019). Artificial intelligence also performs every job like a human being's mind reacts and performs in any kind of problematic situation.

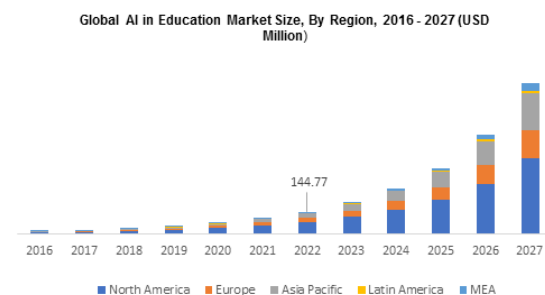


Figure 2: *Rate of usage of global AI in the education market*

(Source: Seta et al. 2020)

Figure 2 shows the rate of global AI users from different countries throughout the world. The main characteristic of artificial intelligence is having the capability of the ability to take any actions in terms of achieving the desired goal that is set for a particular job allocated to the artificial intelligence (Anyim 2021). Artificial intelligence has the mindset to achieve different types of goals these goals include, “learning, reasoning, perception”. Different industries have used artificial intelligence in different ways including “finance, and healthcare” (Chen et al. 2020). A strong performing artificial intelligence can perform many different tasks at one time. Strong artificial intelligence can act like humans in terms of performing any complex job.

Learning quality and practices in higher education

The term learning quality refers to the procedures of the learning and lessons given to the students in higher education. The process of giving the lessons to the student by the professor of the education system needs to maintain a quality (Anyim, 2021). The quality of the learning process needs to be that high so the student can achieve the future goal by studying the lessons in the academy.

Revenues from the artificial intelligence for enterprise applications market worldwide, from 2016 to 2025 (in million U.S. dollars)

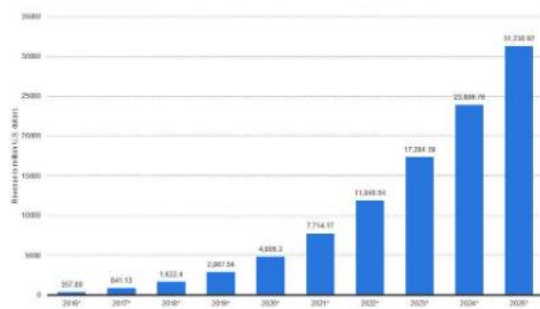


Figure 3: Revenues collected from application of AI

(Source: Forbes, 2018)

Figure 3 depicts the revenue collected from the application of AI by different educational organisations. The teacher needs to be more appropriate in terms of choosing the learning objects and the chapters that are going to be given as the lessons in the class (Seta et al. 2020). The teacher needs to be more careful while providing the lessons to the students as it is important for the future of the students what they can learn from the academy. The learning provided by the teacher to the student are also important in terms of influencing the students in terms of the future aspects.

Effect of artificial intelligence on learning quality

Artificial intelligence gives an impact on learning quality in terms of providing different types of online teaching classes and online learning methods. In recent times online teaching classes and the online learning processes have become much trendier. The students can get more opportunities while

attending the online classes as online classes give more scope to the students to learn more ingredients in one topic. Online learning methods provide the student's different types of hi-tech teaching methods for a better understanding of the topic for the students (Chen et al. 2020). The online teaching methods are also available for the students to answer the queries they have, so the students do not feel difficulty while studying a topic or they can easily get the answer of their queries at any time of the day whenever they want.

Business organizations' reasons for adopting artificial intelligence (AI) worldwide, as of 2017

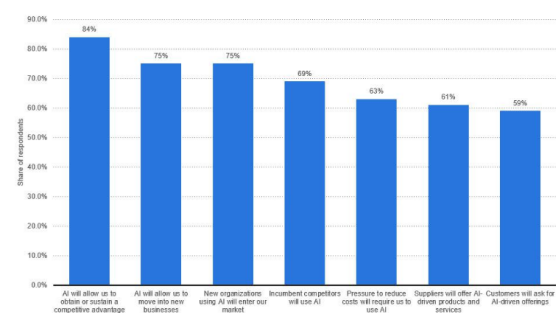


Figure 4: Effect of artificial intelligence in terms of improving the learning quality

(Source: Vrontis et al. 2021)

Online learning methods also help the students by providing different types of resources on a particular topic for the students so that it can help the students in terms of better learning of that particular topic (Chen et al. 2020). The students using the online learning classes have the opportunity to attend all the classes from home which is the comfort zone for each and every student as demonstrated in figure 4. In addition to this, if one student can miss any online class, he or she can record the class and play the video of the class after ending the class and at any time of the day.

Theory on artificial intelligence

In the situated learning theory of education, the acquisition of cognitive and professional skills of an individual is discussed as the artificial intelligence is dependent on development of skills.. Therefore, it is much necessary to develop professional skills as it helps to teach students that they can do better when they gather collaborative skills.

Adoption of specific artificial intelligence (AI) use cases in 2017, by category

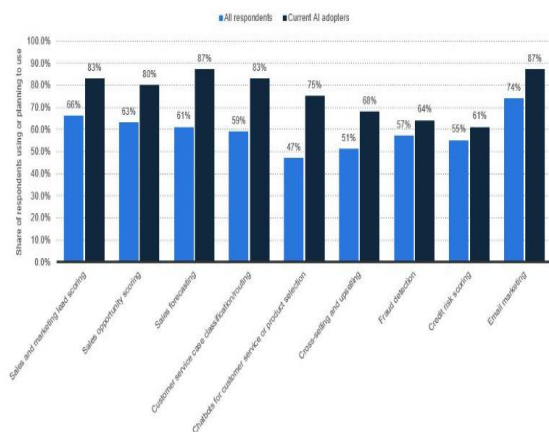


Figure 5: Rates of using AI in specific terms

(Source: Forbes, 2018)

As per this theory, artificial intelligence includes different studies of “neural-like elements” and “multidimensional neural-like growing networks”. The artificial intelligence system acts as the brain of a human system in terms of solving any problems (Vrontis et al. 2021). This theory has been used in this study to make artificial intelligence useful in terms of improving learning quality as shown in figure 5. This theory has been used to correlate artificial intelligence in order to upgrade the level of learning techniques in higher education.

Literature gap

In this research project, the researcher could not be able to cover all the points of that particular due lower number of the previous research papers. Time is also a factor and lack of enough time has an impact on this research project.

METHODOLOGY

The researcher chooses the secondary qualitative research methods for conducting the whole research process. The term secondary analysis of the qualitative data can be described as the data or information collected to conduct this study used to find the answer that is required for the research questions developed

by the researcher in order to complete this research (Mohajan 2018). The questions that have been developed by the researcher are totally different from the actually asked question in the previous research papers on the same related topic. The data that has been required to complete this research study has been collected by the researcher from previous journals and articles that have been published earlier on this particular topic or some related topic (Snyder 2019). The old information that is collected from the previous studies has been reviewed in the present study in order to snake the significance of the study.

The researcher used this secondary qualitative research method to perform the task of a systematic review of “peer-reviewed resources” (Fàbregues et al. 2021). The researcher has been choosing to perform this secondary qualitative research method as this is a cost-effective method. In addition, this researcher chooses this method as the researcher can easily access this method for conducting the whole research project on this topic. The selection of this research method for the research project helps the researcher to increase the understanding power of the researcher (Pandey & Pandey 2021). It also helps the researcher to gain a clear idea about the concept of the work that the researcher has done. This research method also helps the researcher to gain knowledge regarding the topic that has been chosen by the researcher and it also helps to gain some experience in terms of conducting a research project (Fàbregues et al. 2021).

The researcher decided to choose a positivist ideology for gathering the information and the data that are required for the further analysis of the data in this research project. The term secondary data analysis is associated with the “descriptive exploratory framework” (Newman & Gough 2020). In order to collect the data and information, the researcher has been going through all the articles, journals, websites and research papers on this topic or closely related to this topic (Mohajan 2018). The data that has been collected from the previous journals and research papers and articles are very

informative for conducting this research project.

RESULT

Quality review

Table 1: *Quality review*

Authors	Study design	Number of resources	Measured outcomes	Result	Quality review
Chen <i>et al.</i> (2020)	Qualitative research approach	15	Impact of artificial intelligence in education system	The artificial intelligence and its effect on the education system	Moderate
Holmes <i>et al.</i> (2019)	Qualitative method	27	Relation of the artificial intelligence with the education system	Artificial intelligence and its influencing factors toward the education system	Moderate
Anyim, (2021)	Quantitative method	19	Development of the quality of the education system	The different factors that are responsible for the development of the quality of the education system	High
Seta <i>et al.</i> (2020)	Quantitative method	26	Variables affecting the quality of the education service	Different variables that have an influencing effect on the services provided in the education system.	Moderate

(Source: By learner)

Thematic coding

Table 2: *Thematic coding*

Author	Code	Themes
Holmes <i>et al.</i> (2019) Chen <i>et al.</i> (2020)	Artificial intelligence, education, students, problem-solving skill, software applications	Artificial Intelligence is helpful to develop the quality of education

Anyim, (2021) Seta <i>et al.</i> (2020)	Different factors, cognitive skills, formative skills, a community of practice, communication skills	Different factors of AI is responsible for generating cognitive and formative skills
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(Source: By learner)

Thematic analysis

Theme 1: Artificial Intelligence is helpful to develop the quality of education

Artificial intelligence helps by developing different software applications for improving the quality of the education system. Artificial intelligence helps to introduce different types of PowerPoint presentations and graphical presentations in order to give better clearing concepts to the students (Holmes et al. 2019). Artificial intelligence helps the students by giving answers to all the queries that have been asked by the students at any time of the day (Chen et al. 2020). Artificial intelligence improves the quality of the learning techniques in every possible term.

Theme 2: Different factors of AI is responsible for generating cognitive and formative skills

There are different factors of artificial intelligence that help to improve different skills in terms of cognitive and formative skills. Artificial intelligence has different influencing factors that have a significant impact on the different aspects of the quality of learning (Anyim 2021). Different aspects of the quality management of the learning methods are cognitive skills and formative skills (Seta et al. 2020). Cognitive skills help to develop the infrastructure of the education system and the formative skill refers to the skill that is required for the formation of the base of the education system.

Artificial intelligence is also capable of solving complex problems which means that artificial intelligence has the ability to perform solving more than one problem at a time. In this research project, the researcher also highlighted the importance of maintaining the proper quality of the learning in the higher academy. The quality of the learning process and the

learning objectives need to be maintained by the teacher or the guide of the higher academy.

CONCLUSION

Thus it can be easily concluded that in this research project the researcher shed light on the effect of artificial intelligence on improving the learning quality of the higher education system. In this research project, the researcher tries to establish a clear concept about artificial intelligence. Artificial intelligence acts like a human brain and tries to solve problems as a human did. Artificial intelligence help to understand the problem try to find out the solution for the problem just like a human did. This is because maintaining the quality of the learning objectives is directly proportional to the future of the students of that higher academy. Artificial intelligence can directly influence the quality of the learning techniques and the learning objectives of higher studies.

FUTURE SCOPE

This research study is going to be more helpful in terms of bettering the future of online learning and teaching methods. Artificial intelligence is used to improve the quality of the learning's in terms of higher study which in turn also help to increase the future scope of the students. This research can be useful for the future in terms of improving the different features of artificial intelligence in order to make it more useful for improving the quality of the learning methods and learning techniques for the better of the future of the students. The future scope of artificial intelligence in relation to the improvement of the learning objects of higher studies can be considered an important aspect as artificial intelligence can make the learning process very easy and understandable and interesting for the students. This can helpful for the students as

by this process the students can easily learn the topic of the higher studies and the students can get the interest for study synch topics. The inclusion of artificial intelligence also influences the techniques of giving lessons to the students as artificial intelligence can include different types of slides and graphics presentations while teaching the students.

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