

STUDY OF THE IMPACT OF ARTIFICIAL INTELLIGENCE ON PERSONALITY AND ACADEMIC ACHIEVEMENT OF STUDENTS

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ABSTRACT

Nature is ever changing. The impact of change can be easily seen on everything. The teaching process is also not beyond this change. Today's era is technology oriented era, hence the need for new technology based teaching method is being felt as compared to traditional teaching method, and hence the researcher has studied the impact of Artificial Intelligence on personality and academic achievement of students. Experimental research method was used in the study. A total of 120 BBA students were divided into two groups of 60, with one group receiving instruction based on traditional teaching methods and the other group receiving instruction based on artificial intelligence. On the basis of statistical analysis, teachers found the suitability of Artificial Intelligence and the academic achievement of students also increased. Artificial Intelligence has had a positive impact on the personality of students. Therefore, to make class teaching interesting and effective, teaching based on Artificial Intelligence is beneficial for students as compared to traditional teaching method.

1. INTRODUCTION

Science and technology play an important role in the economic prosperity of any country, this fact is clearly visible in the current global scenario. The new generation is giving birth to new inventions every day on the basis of previous knowledge due

to its inquisitive nature. In the series of these inventions, the use of “Artificial Intelligence in Classroom Teaching-Learning” has a very important place. In the current scenario, it has influenced the field of education and has made an important place in education and human life. In the multimedia approach, the word multimedia indicates more than one medium. In this approach, more than one technique and means are used. Many mediums are used by the teacher to deliver the subject matter to the students. Such as lecture, OHP, tape recorder slide, module, TV, computer, textbook, film, radio, seminar, workshop, various methods, systems etc which is run by Artificial Intelligence.

2. LITERATURE REVIEW

The capacity of robots or computers to think and behave like humans is known as artificial intelligence, or AI. According to Wartman and Combs (2018), it details efforts to create computers systems that can mimic human thought processes and behaviour. Thus, the fundamental concept of artificial intelligence is the ability of machines or algorithms to accurately mimic human thought processes and behaviour (Mohammed & Watson, 2019). Timms (2016) asserts that the idea that home computers would eventually incorporate artificial intelligence may result from the existing configuration. It might show up in our lives in a variety of ways. Ng (2017) asserts that A.I is contemporary analogue of electricity. A.I is good to be positioned as the essential building block of the 5th Industrial Revolution, given its capacity to guarantee economic prosperity (see Golic, 2019). That might be the reason China broke prior milestones in 2017 with its \$40 billion AI investment (Mou, 2019). By 2030, it is estimated that China's GDP would increase by 26% (\$7 trillion), AI earnings.

North America is expected to rise by 14.5% (\$3.7 trillion) during the same time (PwC, 2017). These numbers contribute to elucidating the advantages and impact of A.I on education going forward, which in turn moulds the labour force, economy and establishes the foundation for the subsequent Industrial Revolution. The profound development of A.I will have an influence on everything from the administration and education of pupils in classrooms to the broad restructuring of the social order. Schools are among the important institutions that stand to gain the most from the development of artificial intelligence as they must adapt to the digital age and incorporate 21st century abilities into their core curricula. Karsenti (2019) asserts that as technology continues to permeate our lives and captivate our children, schools may find themselves compelled to adapt to new forms of connectivity. This study

focuses on the perspectives of stakeholders in the domains of engineering, law, business, and education about this advancement and the potential applications of AI in education. The goal of this study is to investigate, from the perspectives of participants from several sectors, what artificial intelligence usage in education means and what implications it may have for the field's future.

3. OBJECTIVES OF THE STUDY

The objectives of the research are as follows.

- To obtain information about the suitability of Artificial Intelligence.
- To study the impact of Artificial Intelligence on students' personality.
- To study the impact of Artificial Intelligence on students' academic achievement.

4. HYPOTHESES

The following are the hypotheses of the presented research -

01- The suitability of Artificial Intelligence will be found in the teaching learning process.

02- There will be a difference in the educational achievement of students after teaching by Traditional Method and after Teaching by Artificial Intelligence.

03- There will be a difference in the personality of students after teaching by Traditional method and after teaching by Artificial Intelligence.

5. LIMITATION

The study is based only on geographical area of Lucknow, in one of the renowned degree college which is very small for this type of study. The sample size for this study is 120 student, which is too small for a study like this. Shortage of important aspect such as time, financial problem, and size is the main cause of limitation.

6. RESEARCH PROCESS

6.1 RESEARCH METHOD: Experimental research method has been used for the present study.

6.2 SAMPLE: For the present research, 120 students of BBA class were selected by random sampling method and divided into the following two groups-

- Experimental group 60 students for teaching by Artificial Intelligence.
- Control group 60 students for teaching by Traditional Teaching Method.

6.3 TOOLS: In the present research work, the researcher has used self-made and standardized tools for collection of data

- Educational Achievement Test For the present research work, the researcher used self-made objective educational achievement test for educational achievement test.
- Personality Scale Test Differential Personality Inventory by Dr. Arun Kumar Singh & Ashish Kumar Singh was used for measuring the personality of the students.

6.4 VARIABLES: In the presented research, the variables have been classified as follows-

- **Independent variable** - Artificial Intelligence and Traditional Method
- **Dependent variable** - Personality and Educational achievement

6.5 STATISTICAL OPERATIONS: In the presented research, for statistical analysis, the mean, standard deviation and significance of difference of mean were calculated.

7. HYPOTHESIS AND FINDING

7.1 HYPOTHESIS NO. 01

Suitability of Artificial Intelligence will be found in teaching process.

To fulfill the above hypothesis, questionnaire was filled and analyzed to know the opinion of Teachers. The opinion obtained is shown in percentage in the table –

Questionnaire for Teachers' opinion		Answer in percentage	
S.No.	Question	Yes	No
1	Do you know about Teaching through Artificial Intelligence?	90%	10%
2	Is Teaching through Artificial Intelligence easier than Traditional teaching?	60%	40%
3	Does a Teacher need to work hard and do self-study to teach through Artificial Intelligence?	65%	35%
4	Do Teachers using Artificial Intelligence need to have technical knowledge?	80%	20%
5	Will the attendance of students increase in college through teaching based on Artificial Intelligence as compared to Traditional teaching?	85%	15%
6	Will students stay in college for full time through teaching based on Artificial Intelligence as compared to Traditional teaching?	85%	15%
7	Will the interest of students in studies be increased by teaching through Artificial Intelligence as compared to Traditional teaching?	95%	05%
8	Do you agree that the education given to students should be 100% interesting and effective?	100%	00%
9	Will the relationship between teacher and students improve and students' hesitation be reduced by using Artificial Intelligence as compared to Traditional teaching?	85%	15%

10	Will the use of Artificial Intelligence develop a sense of interdependence and cooperation among students?	95%	05%
11	Do you think it is right to impart traditional education even in the present age of science and technology?	15%	85%
12	Should the students be the focus of education?	95%	05%
13	Is there a difference in personality development and educational achievement of students by using Artificial Intelligence as compared to Traditional education?	85%	15%
14	If new technology (Artificial Intelligence) based education is imparted in private educational institutions and not in government educational institutions, will there be a difference in the students there?	95%	05%
15	Do students learn more easily and quickly by "learning by doing" than by teaching based on bookish knowledge and lectures?	95%	05%
16	Will the habit of self-study be promoted among students by using Artificial Intelligence?	80%	20%
17	Is the use of Artificial Intelligence just a waste of time, labour and money?	25	75%
18	Will the classroom environment be more effective and students more active in the class by using Artificial Intelligence as compared to Traditional teaching?	95%	05%
19	Are you in favour of teaching based on Artificial Intelligence in your college?	95%	05%
20	Will the use of Artificial Intelligence develop a sense of self-confidence and hard work among students?	65%	35%

TABLE NO. – 1.1

On the basis of the above analysis, it can be said that most of the teachers agree to teach using Artificial Intelligence, and consider it an interesting and effective approach.

7.2 HYPOTHESIS NO. 02

There will be a difference in the educational achievement of students after teaching through Traditional method and after teaching through Artificial Intelligence.

Group	Sample number	Mean score	Standard deviation	Critical Ratio	df	Significance of T value
Traditional teaching group	60	15.3	3.99	4.603	118	More than values hence there is a significant difference at Confidence level .05
Artificial Intelligence based group	60	18.4	3.36			

TABLE NO. 1.2 INTERPRETATION AND ANALYSIS OF STUDENTS' EDUCATIONAL ACHIEVEMENT TEST

The C.R. value for the academic achievement of students of Traditional and Artificial Intelligence teaching group was 4.603 which is more than the table value of 1.9803 at 118 df and 0.05 confidence level. Hence, the means of the two groups differ significantly from one another. On this basis, hypothesis number 02 is accepted. Thus, a difference was found in the academic achievement of students of Artificial Intelligence based teaching group and students of Traditional teaching group.

7.3 HYPOTHESIS NO. 03

There will be a difference in the personality of students after teaching by Traditional method and after teaching by Artificial Intelligence.

Group	Sample number	Mean score	Standard deviation	Critical Ratio	df	Significance of T value
Traditional teaching group	60	73.9	4.03	4.603	118	There is a significant difference in Confidence level .05
Artificial Intelligence based group	60	78.0	5.60			

TABLE NUMBER 03: INTERPRETATION AND ANALYSIS OF PERSONALITY TEST OF STUDENTS

The C.R. value for the personality of students of Traditional and Artificial Intelligence teaching group was 4.603. This value is more than the table value 1.9803 at 118 df and 0.05 confidence level. Hence, The means of the two groups differ significantly from one another. Hence, on this basis, hypothesis number 03 is accepted. Thus, a difference was found in the personality of students of Artificial Intelligence based teaching group and students of Traditional teaching group.

8. CONCLUSION

The following are the conclusions obtained from the presented research -

- From the point of view of teachers, the suitability of Artificial Intelligence in the teaching process was found.
- A significant difference was found in the educational achievement of students of Traditional and Artificial Intelligence teaching group. The achievement of students based on Artificial Intelligence (experimental) teaching was found to be

higher. Class teaching is effective with multidimensional approach. Students remain interested and active, whereas in Traditional teaching, students remain inactive and do not take interest.

- A significant difference was found in the personality of students of Traditional and Artificial Intelligence teaching groups. A positive effect of Artificial Intelligence teaching was seen on the personality of students of experimental group.

9. SUGGESTIONS

Based on the research findings, the following suggestions are presented -

- The use of Artificial Intelligence (innovative means, technology) in teaching is a powerful tool. It is necessary to introduce students, parents, teachers and the general public to this. It would be beneficial to motivate teachers to use this approach in classroom teaching.
- 2- The government should instruct teachers to provide such education to students using modern teaching methods, new technical skills, which will increase the achievement level of students as well as develop their personality.

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