# The Application of Artificial Intelligence in Online Teaching Tools, appertained during the Pandemic period for effective and uninterrupted teaching

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### Abstract

Artificial Intelligence, being the ability of a computer to perform tasks like a human has supplemented human teachers during the pandemic period. The AI is altering the educating tools and the educating system, putting the whole world in awe with regard to the future of education. The irreplaceable presence of a teacher has been changed, altering the best practices in teaching via Artificial Intelligence. AI can direct efficiency, integration and streamline administration jobs so as to provide teachers the time and autonomy to share understanding and adaptability, being unique human capabilities where machines cannot subsist. By leveraging the best attributes of machines and human teachers, the vision for AI in online education is one where they work abreast for the best outcome from the students. Since AI is the reality for future students and a step in this area has already been initiated during the pandemic, this study has been carried out to identify the application of AI in Education, the transformation from traditional educational systems to online education, its pros and cons to the teacher and the taught. The study was conducted through questionnaires circulated via Google forms to 91 respondents, being teachers and students. The data collected has been analysed through Simple Percentage Analysis and ANOVA.

### Keywords

Artificial Intelligence, Online teaching, machine and human teachers, pandemic

## 1. Introduction

With the rapid increase of technology over the last 20 years, the teaching and learning process has undergone a sea of transformation. Artificial Intelligence has provided us luckily with a wealth of online tools to supplement the ability to disseminate the latest information to the students while providing them with many different options for learning input and output. Artificial Intelligence has modified the teaching and learning process during the present pandemic situation to a remarkable and unimaginable extent. **Jovanović V., Lazić M. (2020)** Online tools can provide additional ways for students to demonstrate their learning. The Artificial Intelligence factors present in the tools, not only aid in teaching but also to assist collect student work online, create quizzes and exams, and grade digital submissions. Grading assignments, exams, problems etc.

Supported with Artificial Intelligence, Online teaching tools are created for providing independence to the student, improvising the administration of academic processes, encouraging collaboration and facilitating communication between teachers & learners. **Krueger J. I. (2007)** Major online learning

tools adopted for online classrooms, assistive technology and assessment of students were through apps like Zoom, Google Meet, Byjus, Vedantu, etc. Submissions of assignments are carried on through Google classrooms, etc. Grading is done through a host of software's, installed in schools, colleges and universities according to their specifications.

2020 has been a year of transformation and knowing novel things. Everything has changed, including the way kids and university students learn their daily lessons, their submission of assignments and the grading system.  In a way, this has impacted the way educators and students interact with one another. **Midgley C., Anderman E. M., Hicks L. (1995)** The new academic year transitioned learning from face-to-face classrooms to some kind of virtual education set up at home. During the first months of the pandemic, teachers had to scramble and find the best ways to set up a Virtual classroom that would keep their students engaged. **Jelińska M., Paradowski M. B. (2021)** During these months' educators at all level tested tools and programs until they found their favorites.

## 2.  Statement of Problem

In the present study, the researcher has attempted to conduct a study on the various online teaching tools and methods favoured by Artificial Intelligence in various schools and colleges for imparting education during the pandemic period. **W. Zhang, Y. Wang, L. Yang, C. Wang. (2020)** The researcher has found that this pandemic period has been a host of many Artificially intelligent online teaching tools. The study would be appropriate since, as long as safety measures are not followed and vaccines are not effective, online teaching tools would be the medium of imparting education to the students.

## 3.  Scope of the Study

The educational institutions are growing at an alarming rate, so there is a tremendous scope of online tools for teaching. **Woods, R. H., & Baker, J. D. (2004)** Teachers are finding these tools more effective as it eases their teaching and provides the best learning opportunities for the students. The study is carried on among the teaching fraternity of the schools and colleges in Coimbatore.

## 4.  Objectives of the Study

1. To study the applications of artificial Intelligence in online teaching tools applied by teachers during the pandemic period.
2. To identify the transition from traditional learning to online learning with the pros and cons of virtual teaching during the pandemic period.
3. To understand the problems faced by the teachers and the students in implementing teaching and learning methods using artificial intelligence.
4. To provide suggestions for improvement of online teaching tools.

## 5.  Research Methodology

The Primary data for the study was collected by primary survey method through a structured questionnaire framed through Google forms. These forms were circulated through e-mail ids of the respondents. The Sample size of this study was 91 respondents, comprising teachers and students in select schools and colleges in Coimbatore. **Anderson, T. (2003)** Random Sampling method was used in the study. The researcher had sent Google forms at random to various teachers to gather responses. Percentage analysis has been prepared to represent the frequency distribution from the collected data for better understanding. **Huang, Y. M., Liang, T. H., Su, Y. N., & Chen, N. S. (2012)** One – way analysis of variance presents the difference in relationship between the various dependent and independent variables.

## 6. Review of Literature

**Joe Llerena Izquierdo (2021)** states that this research summarizes the collaborative training experience of university professors acting as tutors of their peers. The process progressively strengthened Teacher's ability to use ICT tools while simultaneously opening new spaces for genuine communication that helped teachers begin the new online academic period in a positive way. **Ling Mei Cong (2020)** feels that there are various ways to evaluate the success of synchronous tools, including questionnaires, interviews and students results. Given this study primarily focused on the impact of synchronous tools out comes this measurement provides a more direct proxy of the effectiveness of the instructional design. **John Brunner (2020)** studied that the digital revolution technology has become essential for different types of programs, School management programs, Classroom management programs, Class dojo, Edmodo, Content collectors, Quizzes, Video lessons programs. New technologies have certainly created a significant distance between digital natives and the previous generations.

**Alqahtani, AS, Daghestani, LF, Ibrahim, LF (2017)** specifies that the best app for teaching and learning will be presented as on list. As well as their display of one or more of the AASL standards shared foundations. **Ashutosh Chauhan (2018)** shows that hundreds of digital education tools have been created with the purpose of giving autonomy to the student, improving the administration of academic processes, encouraging collaboration and facilitating communication between teachers and learners. **Clark, L. A., and Watson, D. (1995)** feels that this explores digital learner presence in various higher education degrees in a regional institution in NSW, Australia several tools used for online teaching are explored through individual research projects in relation to the learner presence with the tools being used. It was found that a variety of online teaching tools provided student presence and were effective for learning.

## 7. Data Analysis and Interpretation

**Table 1:** Age and Educational Qualification of Teachers

| Age and Educational Qualification of the teachers | Frequency | Percent |
|---|---|---|
| 25-30 Years | 49 | 53.8 |
| 30-40 Years | 36 | 39.6 |
| 40-50 Years | 6 | 6.6 |
| Total | 91 | 100 |
| Under Graduation | 7 | 7.7 |
| Bachelor of Education | 26 | 28.6 |
| Post Graduation | 15 | 16.5 |
| M.Phil | 15 | 16.5 |
| NET/SET | 13 | 14.3 |
| Ph.D | 15 | 16.5 |
| Total | 91 | 100 |

From the **Table 1** is found that the sample unit comprises 53.8% of the respondents are between the age group of 25-30 years, 39.6% of the respondents are between the age group of 30-40 years and 6.6% of the respondents are in the age group of 40-50 years. **Huang, Y. M., Lin, Y. T., & Cheng, S. C. (2010)** The sample unit comprises Maximum Teachers in the age groups of 25-30 years.

In education qualification 7.7% of the respondents are UG holders, 28.6% of the respondents are qualified as B.Ed., 16.5% of the respondents are qualified as PG, 16.5% of the respondents are qualified as M. Phil, 14.3% of the respondents are qualified SET/NET and 16.5% of the respondents are Ph. D holders. **Bahari, A (2019)** The maximum of 28.6% of the respondents B.Ed. graduates teach online teaching using artificial Intelligence.

**Association Between Online Teaching Tools Used and education level of Students**

- **H0:** There is no significant relationship between Online teaching tools and education level of students
- **H1:** There is the significant relationship between Online Teaching tools and education level of students

**Table 2:** Association between Online Teaching tools used and education level of students

|  |  | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| Zoom | Between Groups | 28.774 | 4 | 7.194 | 7.525 | .000 |
|  | Within Groups | 82.215 | 86 | .956 |  |  |
|  | Total | 110.989 | 90 |  |  |  |
| Google Meet | Between Groups | 22.617 | 4 | 5.654 | 8.055 | .000 |
|  | Within Groups | 60.372 | 86 | .702 |  |  |
|  | Total | 82.989 | 90 |  |  |  |
| Byju's | Between Groups | 7.575 | 4 | 1.894 | 1.300 | .277 |
|  | Within Groups | 125.326 | 86 | 1.457 |  |  |
|  | Total | 132.901 | 90 |  |  |  |
| Vedantu | Between Groups | 9.071 | 4 | 2.268 | 1.560 | .192 |
|  | Within Groups | 125.061 | 86 | 1.454 |  |  |
|  | Total | 134.132 | 90 |  |  |  |
| Go to Meeting | Between Groups | 7.986 | 4 | 1.997 | 1.370 | .251 |
|  | Within Groups | 125.311 | 86 | 1.457 |  |  |
|  | Total | 133.297 | 90 |  |  |  |
| Next learning platform | Between Groups | 35.016 | 4 | 8.754 | 5.450 | .001 |
|  | Within Groups | 138.127 | 86 | 1.606 |  |  |
|  | Total | 173.143 | 90 |  |  |  |

From **Table 2**, it is found that Zoom (f=7.525, P=0.000), Google Meet (f=8.055, P=0.000), Next learning platform (f=5.015, P=0.001) are significant at 5% level of significance.

**Berman, RA (2007)** This indicates that there is a significant relationship between Online teaching tools used and education level of students with regard to Zoom, Google meet, Next learning platform. **Huizenga, J., Admiraal, W., Akkerman, S., & ten Dam, G. (2009)** As the value of significance is more than 0.05, there is no significant relationship between Online teaching tools used and Class of students with regards to Byju's, vedantu, Go to meet.

## 8. Suggestions

The study has identified that through online teaching platforms during the pandemic situation, there is lack of interaction between the teachers and students, no personalization among them, students are not physically present, but are virtually present through their devices. The ethical code of conduct to be followed by students is also absent. **Chang, B, Lee, S, Si, M, et al. (2012)** Though Artificial Intelligence can replace the knowledge imparted in a classroom, the personal touch cannot be substituted. The issues of personalization and being unethical shall be overcome by self-orientation on the part of the students. They should be sincere and honest to learn their lessons. It is the responsibility of the teachers to check whether the knowledge they wanted to provide has accurately reached the end users. Teachers should not depend on Artificial Intelligence for taking classes always. After the pandemic is controlled and the situation is managed, traditional teaching modes should be followed. Artificial intelligence tools of education should only be complementary and not supplementary.

## 9. Conclusion

Educational institutions are forced to be closed. In such a circumstance, the gap in the delivery of knowledge is currently being bridged using "Online platforms and Tools" **Chien, SY, Hwang, GJ, Siu-Yung Jong, M (2019)** enabled by Artificial Intelligence. The students being used to traditional teaching modes have difficulties in adopting to online teaching methodology. They find difficulty in adapting to a virtual classroom set up. In a traditional classroom set up, teachers can identify the personal mind set of the students and give appropriate suggestions and counselling. **Ahmadi, S. (2020)** Motivation and encouragement also lacks in online teaching platforms Health issues and mental stress is the outcome of technology-based teaching methods. Though AI offers all the desired knowledge regarding a subject matter, wisdom can be imbibed only from a teacher.

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