

A STUDY ON PERCEPTION OF TEACHERS TOWARDS AI APPLICATIONS IN EDUCATION

M. Fatima Lucia Sheeba*

Abstract *AI plays an important role in the field of education. The objective of the study is to trace the uses of AI applications and analyse the perception of teachers towards the AI applications in education sector. It can provide solution in many ways to the mounting challenges in this modern world. AI plays a significant role in creating certain tools such as intelligent tutoring system, personalized support, intelligent content creation and delivery, smart learning etc. It has already been applied successfully in several educational instances and improve learning and student developments, as well as educator's performance. As Artificial Intelligence in educational solutions continue to mature, the hope is that the AI can help fill needs gaps in learning and teaching and allow schools and teachers to do more than even before. The study analyses the perception of teachers on AI Applications have enhanced innovative teaching methods. The study also shows that Artificial Intelligence applications help teachers in saving their time and energy facilitating skill development and innovative teaching and learning. The review indicates that modern technology on teaching could be embraced to enhance knowledge in this present competitive world. The rapid increase in the use of AI requires that educators and students have a basic understanding of AI and data used to be able to engage positively, critically and to exploit its full potential. Thus the research identified the uses of AI applications and the perception of teachers on enhanced teaching experience using these applications.*

Keywords *Education, Teachers, Artificial Intelligence*

INTRODUCTION

Education is the process of acquiring skills, knowledge, values and attitudes through systematic instructions. It also acts as a powerful tool for personal development, social progress and betterment of the society. Education has the power to change the world. Provided it is given in the right manner, to the right individuals, it can help thrive not only individuals, but also nations growth. The role of education in our life helps us to optimize our thinking towards positive thoughts! This optimal thinking tried to give some solution for the educational challenges rose during the COVID-19 pandemic. This crisis changed the way the educational systems work and rewrote the rules on how students and teachers interact and how education takes place. It helped education reach the students in urban as well as rural areas and even remote places through online education, a technological development. As a continuity, there has been a growing trend in higher education to incorporate modern technologies and practices in order to improve the overall educational experience.

The idea of using Artificial Intelligence (AI) in education is not new. AI is accomplished by studying the patterns of the human brain, and by analyzing the cognitive process. The outcome of the studies develops intelligent software and systems. Some of its achievements include face recognition, natural language, processing, speech recognition, text

production, language translation, drug development, and more. It has also revolutionized the way, many people think about health, living, learning and other aspects of the daily lives. For example, Chatgpt in the education sector is an emerging AI tool. It is used to create several educational applications like Learning management systems, video assisted learning, virtual and augmented reality, content creation and personalized learning, data driven decision making, automated grading and feedback.

USES OF AI IN EDUCATION

The potential of using artificial intelligence in education to enhance learning, assist teachers and fuel more effective individualized learning is exciting, but also a bit daunting. It offers several benefits, including improved accessibility, tutoring, automated grading and administration and streamlined workforce. These provide students with high quality education and relieve teachers of fatigue. To have an intelligent conversation about AI in education, one must first push past imaginary science, fiction, scenarios of computers and robots, teaching the children, replacing teachers and reducing the human element from what is a fundamentally human activity.

There is a robust debate throughout the technology, community and beyond about ethics in artificial intelligence and most university degree programs are integrating courses

* Assistant Professor, MHRM Department, St. Mary's College (Autonomous), Thoothukudi, Tamil Nadu, India.

on AI ethics into their curriculum. The exciting possibilities of AI in education.

POTENTIAL BENEFITS OF AI IN EDUCATION

AI does not detract from classroom instructions, but enhances it in many ways. Some intriguing potential pluses of AI in education are:

Personalization

As we know, teaching is such an interesting skill in order to develop the students we handle. It can be overwhelmingly difficult for one teacher to figure out how to meet the needs of every student in his or her classroom. AI system easily identifies the learning capability, strengths and weakness and create learning strategies by adopting assessments and personalized learning methods to optimize the learning outcome.

Feedback on Course Quality

If many students are answering, a question incorrectly, AI can identify that the specific information or concepts that students are missing, so educators can deliver targeted improvements in materials and books.

Meaningful and Immediate Feedback to Students

Some students feel shy about receiving negative feedbacks in classrooms but with AI students can feel comfortable to make the mistakes necessary for learning and receiving the feedback for further improvement in the academics.

Power of AI in Education

According to Mark, AI is not a threat to teachers; it is not that to replace teachers, but rather to enhance the teaching quality that by delivering better education to children, He outlined AI is potential to help our education provide enhanced:

Automation of administrative tasks;

Tutoring and support outside the classroom;

Differentiated and individualized learning;

Universal access for all students;

Few examples of AI in education.

Adaptive Learning

This method is used to analyze the present skill level and thereby creating a guided instructional experience to make them more proficient.

Assistive Technology

Due to the advancement in technology, special needs of students access a more equitable education.

For example, reading passage to a visually challenged person.

Early Childhood Education

AI is currently adopted in many educational games interacting with the children, teaching, basic academic skills and more.

Data and Learning Analytics

AI is currently utilized by teachers and education administrators to analyze and interpret data regarding the students and their information.

Scheduling

It helps administrators to schedule courses and individuals to manage their daily, weekly, monthly or yearly schedules.

Overall School Management

AI is currently used to manage entire school, maintaining the records of students, transportation, IT, scheduling maintenance and budgeting.

Writing Skills

Most people use the grammar apps to help and assist a writing.

Currently AI has been Involved in:

- Classroom or Behavior management
- Lesson planning

- Classroom audio visual
- Parent teacher communication
- Language learning
- Test prep
- Assessment
- Learning management systems
- Gamification finance
- Start scheduling in substrate management.
- Professional development
- Transportation
- Maintenance
- Finance
- Cyber security

Safety and Security Usage

Usage of Artificial Intelligence in Higher Education include:

- Plagiarism prediction.
- Exam integrity.
- Chatbots for enrolment and attention.
- Learning management systems.
- Transcription of fickle T lectures.
- Enhanced online discussion boards.
- Analyzing student success metrics.
- Academic research.
- Connected campuses.

A few Artificial Intelligence infused specific technologies now being used in education are:

Thinks Ter Math: Described by its graders as maths tutoring program. Next line leverage is human interaction and groundbreaking AI to create personalized learning programmes.

Brainly: It is a social media site for classroom questions.

KidSense: It is an AI educational solution designed for children such as voice to text tool with algorithms aligned to recognize harder to translate speech of young learners.

Nuance: It is a speech recognition software used by students and faculty is capable of transcribing 160 words per minute. This especially enhances the writing and speaking skills of students.

Duolingo: Duolingo is aimed at a broader audience than many other edtech tools.

The language-learning app uses AI to help anyone

progressively build foreign language skills. As language learners work through various mini-quizzes and other testing tools, Duolingo adapts and evolves as their skill levels increase.

Duolingo reports it currently has 120 million users learning 19 distinct languages through the app.

STATEMENT OF THE PROBLEM

One of the problems with traditional schooling is the lack of skill-based and creative education. In this modern world, almost all kinds of profession demand innovation, creative thinking, flexibility and practicality.

Although India has been strengthening its educational system since 2009, when the Right to Education (RTE) was passed, mandating Free and compulsory education, the process has been significantly hindered by the COVID-19 pandemic. For the need of hour an adoption of online education provided a solution to the challenges faced by the Indian education system to some extent. Technology advancements such as availability of and access to digital infrastructure, including the internet, laptops and phones made it possible. Through this, use of white boards, flipped classroom method, live online classes, enabling helping room, discussion, recording of screens and videos by using different tools and techniques, i.e., Artificial Intelligence for improving teaching techniques were adopted. Thereby a major transformation in education system has been implemented.

OBJECTIVES OF THE STUDY

The main objective of the study is to trace the use of AI applications in education sector.

To study about the perception of teachers towards AI applications in education.

SCOPE OF THE STUDY

The present study focuses only on the perception of teachers towards AI applications in education.

Only teachers and professors from Southern parts of Tamil Nadu were considered as targeted samples.

METHODOLOGY OF THE STUDY

In order to achieve the objective stated, the following methodology is adopted.

Sources of Data

The study is based on both primary and secondary data.

Primary Data

Primary data is collected through a well framed and structured questionnaire to elicit well considered perception of the respondents.

Certain responses were measured with the help of five point Likert scale.

Direct interviews and discussions were also conducted for respondents to get basic inputs.

Secondary Data

The secondary data is collected from journals, magazines, publications, reports, books, periodicals, research articles, websites and manuals.

LIMITATIONS

The study involves only the perception of the teachers on AI applications.

As AI is in the beginning stage, only few applications have been taken for Research purpose.

Hence, it is only specific and needs further studies to be generalized.

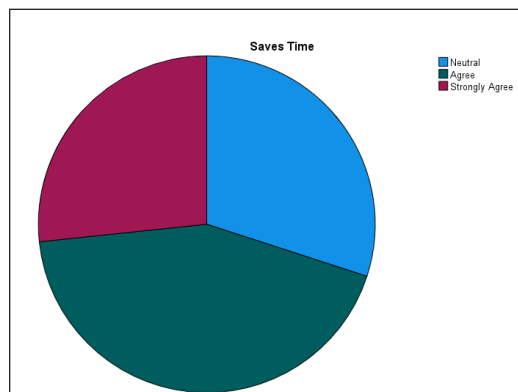
ANALYSIS AND INTERPRETATION

The use of AI applications in Education has been analyzed using different factors to know the perception of teachers in schools and colleges towards AI and its impact on teaching.

Table 1: Perception about Time Saved While Using AI Application in Teaching

AI Saves Time			
		Frequency	Percent
Valid	Neutral	9	30
	Agree	13	43.3
	Strongly Agree	8	26.7
	Total	30	100

Source: Computed from Primary data.



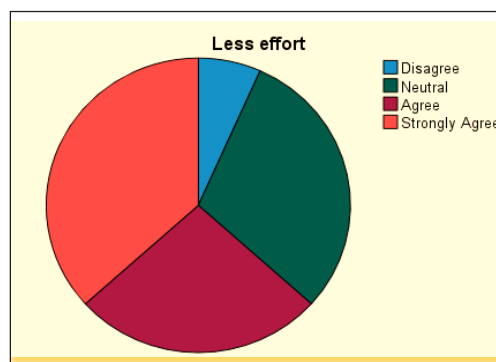
Inference

From the Table 1, it is inferred that majority (73%) of the respondents have saved time while using these AI Applications.

Table 2: Perception about Work Being Done with Less Effort by Using AI Apps

		Frequency	Percent
Valid	Disagree	2	6.7
	Neutral	9	30.0
	Agree	8	26.7
	Strongly Agree	11	36.7
	Total	30	100.0

Source: Computed from Primary data.



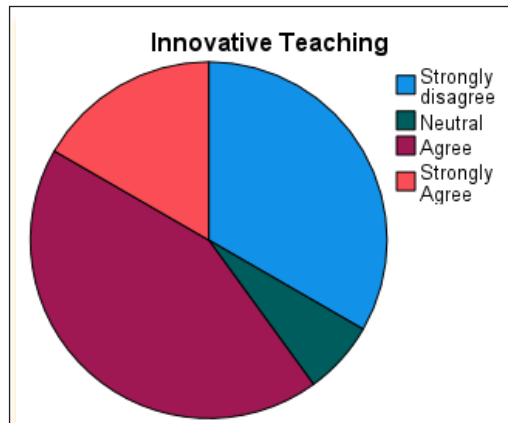
Inference

From the Table 2, it is analyzed that most (63.4%) of the respondents agreed or strongly agreed that they have put less effort on teaching methods using AI Apps.

Table 3: Perception about Facilitating Innovative Teaching Methods While Using AI Applications

		Frequency	Percent
Valid	Strongly disagree	10	33.3
	Neutral	2	6.7
	Agree	13	43.3
	Strongly Agree	5	16.7
	Total	30	100.0

Source: Computed from Primary data.



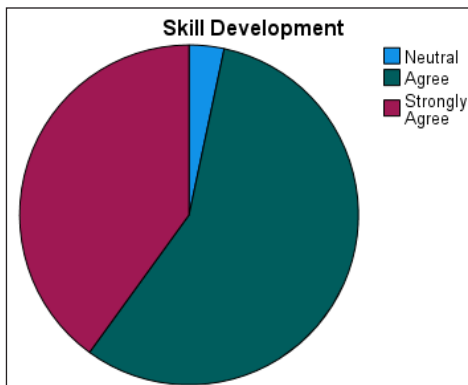
Inference

From the Table 3, we can infer that majority of the respondents (60%) agreed AI Apps have helped in more Innovative Teaching.

Table 4: Perception about Facilitating Skill Development

		Frequency	Percent
Valid	Neutral	1	3.3
	Agree	17	56.7
	Strongly Agree	12	40.0
	Total	30	100.0

Source: Computed from Primary data.



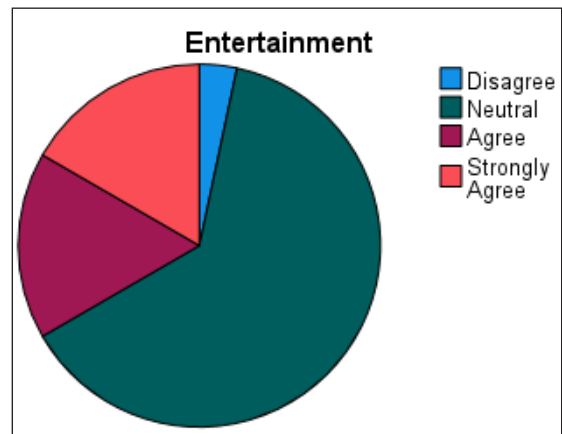
Inference

From Table 4, it is clear that Skill development process have been enhanced due to AI Applications for a vast majority of respondents (96.7%).

Table 5: Perception about AI Apps Being Suitable for Entertainment Purpose

		Frequency	Percent
Valid	Disagree	1	3.3
	Neutral	19	63.3
	Agree	5	16.7
	Strongly Agree	5	16.7
	Total	30	100.0

Source: Computed from Primary data.



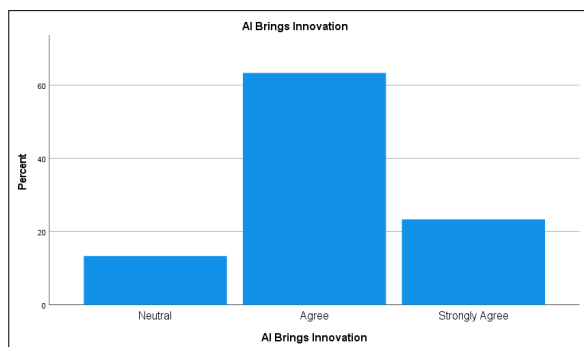
Inference

From Table 5, it is clear that most of the respondents (63.3%) neither agree nor disagree that AI Applications are suitable for entertainment purpose.

Table 6: Perception about AI Facilitating Innovation in Teaching Methodology

		Frequency	Percent
Valid	Neutral	4	13.3
	Agree	19	63.3
	Strongly Agree	7	23.3
	Total	30	100.0

Source: Computed from Primary data.



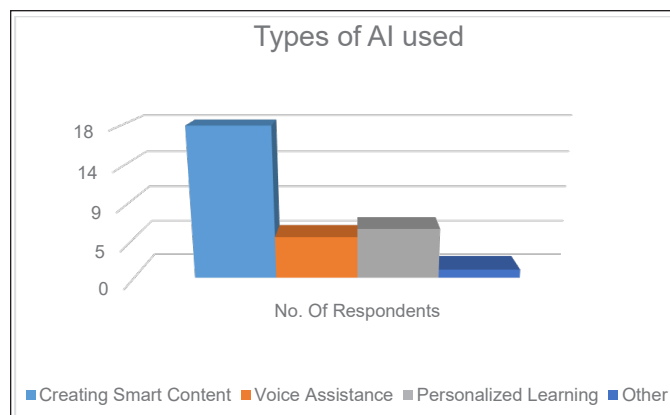
Inference

Table 6, implies that majority of the respondents(86.6%) agree or strongly agree that AI Application can facilitate innovation in Teaching.

Table 7

Purpose of AI	No. of Respondents	Percentage
Creating Smart Content	18	60
Voice Assistance	5	17
Personalized Learning	6	20

Purpose of AI	No. of Respondents	Percentage
Other	1	3
	30	100



Inference

From Table 7, it is observed that most of the respondents (60%) use AI apps for Smart content creation, 17% of the respondents use it for Voice Assistance, 20% use it for personalized learning, 3% used for other purpose.

Table 8: Overall Satisfaction Level Towards AI in Education

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Below 5 Years	8	4.63	.518	.183	4.19	5.06	4	5
5 to 10 Years	10	3.60	.699	.221	3.10	4.10	3	5
10 to 20 Years	6	3.83	.408	.167	3.40	4.26	3	4
more than 20 years	6	3.17	.408	.167	2.74	3.60	3	4
Total	30	3.83	.747	.136	3.55	4.11	3	5

Table 9

One Way ANOVA

Overall Satisfaction of teachers towards AI Apps

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	8.225	3	2.742	8.976	.000
Within Groups	7.942	26	0.305		
Total	16.167	29			

Inference

One way ANOVA shows that the significance value is 0.000 which is lesser than 0.05 (level of significance) ($p < 0.05$). Hence there is a significant difference of variance in Overall

Satisfaction level of teachers towards AI Applications based on years of experience.

FINDINGS

- From the study it is identified that most of the teachers have perceived that use of AI applications has saved time.
- Majority of the teacher's perception about work being done with less effort by using AI apps creating lesson plans and in curriculum designing.
- Most of the teachers felt that AI has enhanced teaching in a more innovative way.
- Teachers have observed that AI applications can make education interesting as it has been designed to analyze their strengths and weakness and adopt assessment based on their capability.

- One way ANOVA shows that there is a significant difference of variance in Overall Satisfaction level of teachers towards AI Applications based on years of experience.

SUGGESTIONS

Some of the suggestions placed by teacher are:

- As using AI Apps can save time and energy to a greater extent, students and admin staff can also use it to be more efficient.
- Teachers may be benefited by personalized approach through smart content preparation tools.
- Although AI enhances teaching techniques, traditional approach of teachers on guiding through moral values can never be replaced. Hence teachers should guide students to use AI in the right manner.
- Introducing AI at school level and college level with certain restrictions can be more beneficial.
- AI could be more productive to teachers and students when it is more diligently and safely used.

CONCLUSION

AI has the potential to revolutionize learning with opportunities in personalized learning and grading. It can

train students according to their interests, so there are possibilities to distract them in many ways. Since while implementing AI in education in a healthy state, certain ethical consideration and restrictions shall be made based on age limits. Hence, it is important to strike a balance between the benefits and challenges of AI applications. Educators need to be mindful of the limitations of AI and use it appropriately, in order to develop skills. AI has the potential to transform education, but it must be used ethically, transparently and with considerations for learners and educators alike.

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