EVOLUTION AND REVOLUTION OF ARTIFICIAL INTELLIGENCE IN EDUCATION

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This Report Presented in Partial Fulfillment of the Requirements for the Bachelor Degree of Computer science and Engineering

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APPROVAL

This Project/internship titled **"Evolution and Revolution of Artificial Intelligence in Education"** submitted by Arijit Mondol Brinto(183-15-11934), Sajib Shovon Roy(183-15-11940), Jobael Ahmed Nishat(183-15-11832) to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfilment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 29 January 2023

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We hereby declare that this project has been done by us under the supervision of **Mr. Shah Md Tanvir Siddipuee, Assistant Professor, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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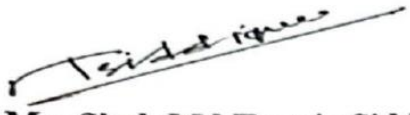

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ABSTRACT

Artificial Intelligence is now present in practically every aspect of our life. Artificial intelligence is a burgeoning technology that has the potential to revolutionize every aspect of our social interactions. In the field of education, AI is currently developing new teaching and learning solutions that will be evaluated in a variety of scenarios. New educational technologies can help students attain and manage their educational goals more effectively. First, this study examines how artificial intelligence (AI) can be used to improve teaching outcomes, including examples of how AI might assist educators in using data to improve the fairness and ranking of education in underdeveloped countries. The purpose of this study is to look into teacher and student perspectives of AI's use and efficacy in the classroom. Its drawback is that it is regarded as a good educational system and source of human knowledge. We tried to find out the answer that "what was the thoughts of the students or the teachers? We used six algorithms. Those are: GBC, SVM, Decision tree, KNN, Random Forest and Logistic regression. The best accuracy was 75%. Teachers and students both advocate for the positive usage of AI in the classroom. Teachers, on the other hand, are more adaptable to new technology advances than students. More research on the impact of generational and geographical diversity on instructors' and students' perceptions of AI in education could help to improve its effectiveness (AIED).

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INTRODUCTION

1.1 Introduction

All human acts are dependent on expectations for the future. We can't foresee the future since it hasn't happened yet, but we can use what we know today to imagine and make it happen. The better we understand the present and the history that has shaped it, the better we will be able to comprehend the future possibilities. To fully appreciate the benefits and difficulties that artificial intelligence presents, we must first grasp what AI is now and what the future may hold once AI is widely deployed in society. AI has the potential to enable new approaches to learning, teaching, and education, as well as to change the world in ways that present new difficulties for educational institutions. The application of AI in education could lead to new insights into how people learn, as well as a shift in how learning is measured. It may reorganize classrooms or render them obsolete, improve teaching efficiency, or force pupils to adapt to technological demands, robbing humans of their agency and ability to take responsible action. Everything is conceivable. Now is an excellent time to consider what artificial intelligence (AI) might mean for learning, teaching, and education. There's a lot of buzzes, and the subject isn't easy. It is, nevertheless, significant, fascinating, and well worth the effort.

Since childhood, the educational and learning process has been ongoing. Many factors are used to evaluate student and teacher performance. Teachers evaluate pupils for a variety of reasons, including discipline, inventiveness, involvement, learning speed, teacher obedience, and so on. The understudy's consideration regarding the topic and capacity to copy their comprehension in the test is at the first spot on the list. For an assortment of reasons, marks/grades for the understudy's information on the branch of knowledge are at the first spot on the list. The main explanation is that an educator ought to have the option to assess an understudy because of their reactions to inquiries throughout some undefined time frame.

Estimating different qualities in them requires coordinated exertion concerning the educator, who is already overburdened with professional and personal obligations. Most educators utilize their predispositions to make it simpler to finish an appraisal to quantify their different abilities. As a result, an assessed pupil is unable to apply actual skills, knowledge, or talents. Pupils place a high value on a teacher's ability to communicate with students, as well as their knowledge, subject matter, level, empathy, and a variety of other characteristics. Students desire to be instructors' favorites in most circumstances, while professors have long been accused of being biased toward some students. This frequently occurs when a pupil is unable to reach the teacher. Both the teacher's and the student's true focus is diverted in this situation.

The AIED community has spent most of the last 25 years concentrating on solving the two-sigma challenge by developing systems that are as successful as human one-on-one tutoring (Van Lehn, 2011). We've made great progress toward that goal throughout the years. We've gotten excellent at designing "faster classrooms," to use Ford's comparison from the paragraph above. Much interactive learning environment (ILE) papers demonstrate increased efficiency by exhibiting similar learning benefits in less time (see Cen, Koedinger, & Junker, 2007).

A typical utilization has often been one student with a computer in a math or science classroom to solve step-based problems centered on domain-level knowledge (cf. VanLehn, 2006). However, many recent advancements in educational methods and theories are not accounted for in this use case. The relevance of more general learning abilities and competencies such as metacognition, critical thinking, and teamwork has been underlined by the introduction of 21st-century skills (Trilling & Fadel, 2009) and Next Generation Science Standards (NGSS, 2013). As a result, today's educational environments and ideas attempt to combine authentic practices in collaborative settings employing significant challenges. The field of AIED must adapt to changes to preserve its relevance and influence. Current educational theories call for more agency and personalization, therefore these transformations in education are also an opportunity (Collins & Halverson, 2010). Many conventional classroom arrangements, on the other hand, are ineffective in engaging students in "large" problems (Kirschner, Sweller, & Clark, 2006; Tobias & Duffy, 2009) or providing students with choices (Kirschner,

Sweller, & Clark, 2006). (Collins & Halverson, 2010). Both students and teachers require more individualized assistance.

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1.2 Motivation

This paper depicts the present status of craftsmanship in man-made reasoning (AI) and its possible effect on education. It gives theoretical establishments to all-around informed strategy, arranged work, research, and forward-looking exercises that address the valuable open doors and difficulties made by later improvements in AI. The paper holds back nothing, yet it likewise makes commitments that are of interest to AI innovation engineers and specialists concentrating on the effect of AI on the economy, society, and the eventual fate of schooling and learning. This paper takes a gander at what

This could mean getting the hang of, instructing, and training. It expects to give a basic survey and, what's more, a planned point on pertinent AI improvements as a reason for a very much educated policy. Oriented conversations about the eventual fate of these spaces.

It is a commitment to the Digital Education Action Plan. Which predicts strategy examination and direction on the effect and capability of advanced innovations in training.

1.3 Research Question

Here are the main questions that were the focus of this thesis:

· What is the current state of artificial intelligence in education?

· What are the obvious study areas and research designs connected to AI in education?

1.4 Expected Outcome

- Good knowledge about AI.
- Evaluation of AI on Education.

1.5 Report Layout

This report varied in a total of six different chapters. Which are capable of extending the understanding of "Evaluation of AI on Education" more briefly. In the first chapter, we'll mention the introduction, motivation, rationale study, research questions and the last one is the expected outcome. In the second chapter, we'll briefly about some related works, which types of challenges we faced, and about the research summary. In the third chapter, we'll talk about our research subject and instrumentation, and workflow of the model. In the fourth chapter, we'll talk about the result that we got, the evaluation of our AI. In the fifth chapter, we'll describe its impact on our society, impact on our environment, and sustainability. In the sixth chapter, which is our last chapter, we'll mention the conclusion and our future works.

CHAPTER 2

BACKGROUND STUDY

2.1 Introduction

Artificial Intelligence Education arose as a specialty field in the 1970s, enveloping new innovation in instructing and learning, for the most part in advanced education. AIED tries to give more customized, adaptable, comprehensive, and connecting advances as well as computerize day to day learning errands by means of robotized appraisal and input [6] [18]. In principle, AIED could help guardians in improving their children's early linguistic development, as well as teachers in selecting tools, organizing lessons, and so on. boosting student participation and providing tailored instruction [16]. AIED mixes virtual reality and is encased as a robot or virtual help. It acts as sensors, capturing students' and teachers' visual, aural, and physiological data. This form of learning data can assist teachers better understand how learning happens in real time and help them choose effective teaching methods [18]. AIED devices ought to be able to assist in the prevention of student or teacher burnout [33], as well as bridging the achievement gap between pupils caused by individual inequalities.Regardless of many years of examination [26] the AIED apparatuses have not completely taken advantage of prospective technology and appear to fall short of their promises [29].

NESTA is a nonprofit organization based in the United Kingdom that manages the Global Innovation Fund on a global scale. In its 2018 report on advanced abilities, it will prescribe the accompanying 16 skills to the twenty-first 100 years. They are grouped into three categories, as shown in Figure 1, which include fundamental knowledge, skills, and personality traits. Schneider [20] examines future skills in another paper, arguing that future work is dependent on key factors in ecological manageability, urbanization, developing disparity, political vulnerability, mechanical headway, globalization, and segment change, in addition to automation. According to them, interpersonal skills, higher-order cognitive abilities, and system skills are prioritized. The importance of originality, creativity, and active learning cannot be overstated. Broad knowledge, as well as unique traits for specific vocations, will be required of the future workforce.

2.1.1 What is Artificial Intelligence?

Artificial intelligence refers to systems or machines that execute tasks by mimicking human intelligence and can iteratively improve themselves based on the data they collect. AI comes in a variety of shapes and sizes. AI is more about the process and the ability to think faster and analyze data than it is about any certain structure or function. Although pictures of high-functioning, human-like robots taking over the globe conjure up images of AI taking over the world, AI isn't meant to replace people. Its goal is to vastly improve human skills and contributions. As a result, it is a highly valued commercial asset.

Artificial intelligence is defined in a variety of ways. AI is a machine that thinks, understands languages, solves issues, diagnoses medical ailments, keeps cars on the highways, plays chess, and makes impressionistic imitations of Van Gogh paintings, according to newspaper headlines. AI is frequently defined as a computer system that can execute tasks that are typically associated with intelligent beings. Artificial intelligence is currently usually defined as a scientific subject, as this definition is rather problematic in that it forces us to define intelligence and is inconveniently tautological.

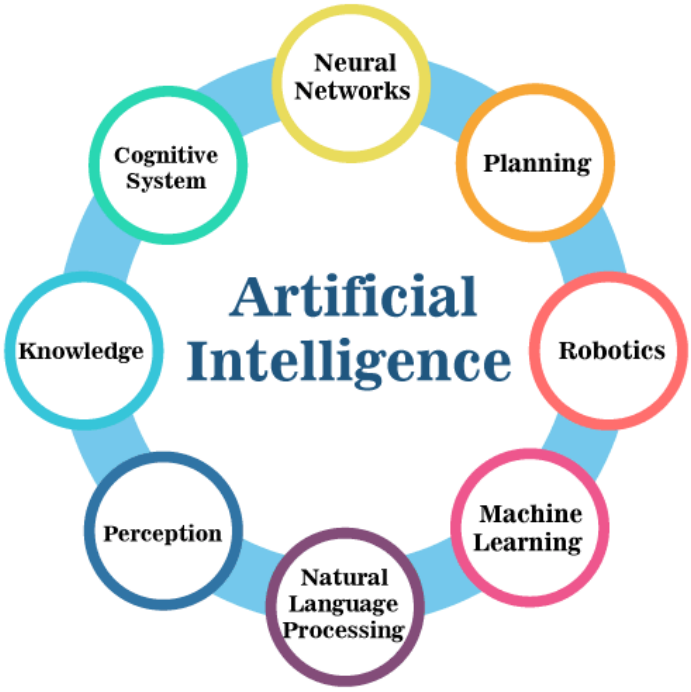

Figure 2.1.1.1: Artificial Intelligence [19]

2.1.2 Types of AI:

Based on Interaction there are 4 types of AI:

- **Reactive Machine:** The most fundamental form of artificial intelligence is reactive machines. They can carry out current chores and requests, but they cannot retain information or draw lessons from the past. There need to be advancements in memory management and data storage for AI to be used in more complex contexts.

- **Limited Memory:** Google and Image Net introduced the ability for artificial intelligence to store historical data and provide forecasts in 2012. Most AI applications nowadays are based on the limited memory paradigm. This kind of artificial intelligence (AI) can be used in a variety of contexts, from catboats to self-driving cars.

- **Theory of Mind:** Machines are capable of recalling information from the past and storing knowledge, but they are unable to detect minute environmental changes or emotional cues. The term "theory of mind" used to define this idea is taken from psychology and refers to people's capacity to perceive the emotions of others. Self-driving cars may outperform people 90% of the time, but they still cannot read emotions. Theory of mind has the potential to transform how we use technology.

- **Self-Awareness:** The AI point of singularity is the stage after the theory of mind. It is believed that when that occurs, AI machines would be unmanageable. However, according to Seth Rogenmoser, we shouldn't be concerned about AI taking over the planet.

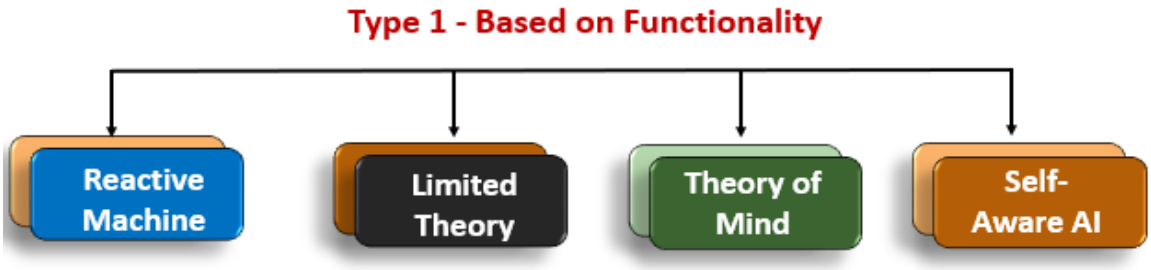

Figure 2.1.2.1: Types of Artificial Intelligence

2.1.3 How Do Honey pots Work?

The objective of AI is to create a computer system that can simulate human behavior and employ human-like reasoning to solve challenging issues. AI systems use a wide range of different technologies, together with a full host of methods and procedures, to do this... [20]

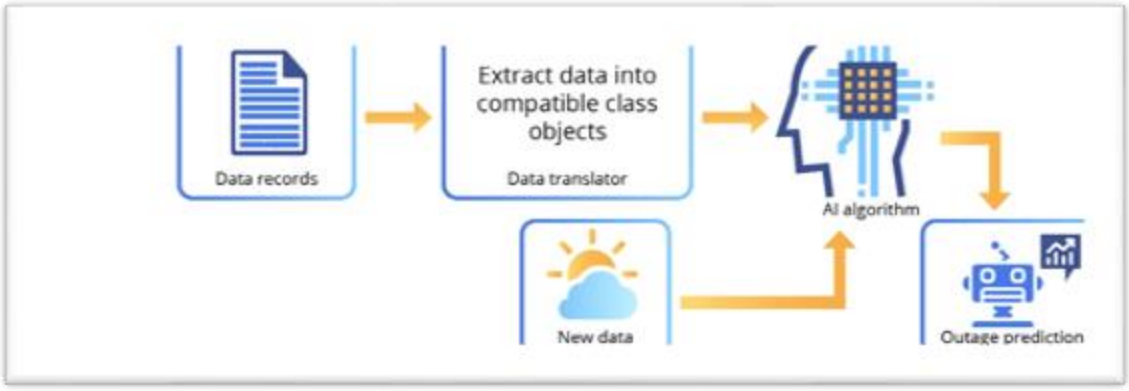

Figure 2.1.3.1: Working process of Artificial Intelligence

2.1.4 The use of AI in education:

Many of these anomalies cause knowledge-gainer's learning models and instructor-educating models to alter over time. In the current situation, students require a straightforward method of learning and are likewise anticipated to serve as mentors.

This altered the construction of the classroom and the assets utilized in it. The utilization of AI in schooling has gotten a great deal of interest for an assortment of reasons:

- **Aggregation:** To provide relevant solutions to instruct pupils, Man-made intelligence arrangements can be joined with other IT ventures like insightful innovation and an oversaw IoT organization.

- **Recognition:** Data research reveals that versatile AI arrangements will feature critical learning areas for the student. You can recognize and deal with the development issue with robust security and access control.

- **Mechanization:** Teachers can spend more time connecting with students if they automate simple chores like reviewing, classifying digital assets, or scheduling.

- **Description:** Artificial intelligence-driven examination in training distinguishes key patterns, draws key markers, and assists educators with fostering the best homeroom that drives mechanical change. Student needs and instructional expectations are continually shifting, so guaranteeing that the substance given by instructors is significant and functional is a challenge.

2.2 Related work:

Some teachers are aware that their jobs may be jeopardized as a result of intelligent technology. Some training robots have been developed. While the instructor's job might change, most experts agree that AIED enhances rather than replaces the educator's experience. Others claim that utilizing it is time-consuming. The course of change and the need to ponder the job of people on a very basic level are two advantages of employing AI. Researchers can effectively use AI to allow humans to achieve all of them: manage an elevated degree of decision and dynamic reasoning.

Future teachers should be able to use artificial intelligence to reap these benefits. This includes developing a realistic grasp of AI's capabilities. To effectively manage and oversee AIED's data interpretation services to further develop informative methodologies. Instructors and teachers should set up their understudies for the rapidly impacting universe of AI, which will have obscure necessities for future work capacities. There is a more grounded center around modern mental and emotional well-being results. Efficiency, advancement, decisive reasoning, critical thinking,

independent direction, and cooperation are all important aspects of the twenty-first century. Teachers and students can benefit from AIED's on-demand online training opportunities throughout their lives.

The Frey & Osborne Report looked at 702 natty gritty callings utilizing AI as Gaussian grouping cycles and observed that 47% of general work in the United States is in danger and that wages and training levels have areas of strength for a relationship with the probability of computerization of the calling. Many shrewd applications are fabricated and made for training and understudy networks, as per McNeill of the Microsoft Education Blog AI in the Classroom. Some applications, such as presentations, translators, AI-based vision, Microsoft Office's lens, and so on. They illustrate their value from the standpoint of boosting student performance and permitting instructors to make a superior educational program course for understudies. There are occasions where AI is utilized as an "assistant instructor" who is trained in 40,000 messages, for example. Based on previous responses, the software could answer similar queries. The answer for the subject of taking a gander at the association between the solicitation and the modified responses is this right hand. As per the creator, computerized reasoning (AI) could reform the climate in which understudies learn and by whom they are educated. Hardly any understudies show they are reluctant to respond to an educator's inquiry before their cohorts during class. While they're remaining amidst a class, they don't see the value in committing errors or having them brought up to them. In such cases, AI can be of great assistance by conversing with these individuals and encouraging their collaboration and curiosity in learning more about the issue.

The advancement of ITS, PAs, and smart courses is inspired by the objective of versatile customized learning and instructing. While ITS and PAs give a UI or encapsulated specialist for figuring out how to empower AI, these frameworks habitually utilize a versatile way to deal with helping individual teachers with understudy learning exercises. Changing educational program errands, the intricacy of showing exercises, or the connection point of individual understudies or gatherings of understudies on request is alluded to as instructive versatile learning. Students' behavior, achievements, and learning preferences are the focus of adaptive learning approaches. In software engineering, versatile learning is an idea where calculations are worked to distinguish how and when to adjust to the learning climate or potential

undertakings. For instance, ITS goals might incorporate utilizing versatile preparation to give understudies prompts so they can perform more confounded issues independently.

Versatile learning is used to progressively lessen the number of inquiries posed until the ability is accomplished and more muddled assignments are laid out, permitting understudies to stay in the zone of most noteworthy improvement. Learning investigation consolidates human judgment with computerized information examination, perhaps supported by man-made consciousness. The objective of the preparation table is to acquire instructive abilities and conditions that can be utilized to assist with peopling settling on better choices.

The expression "IOT" alludes to the rising skill of regular items to associate with the web and speak with different gadgets. It incorporates light switches, coolers, and other family gear in brilliant houses. Shrewd urban communities, savvy transportation, and brilliant natural observing are a few further models. Cell phones and other pervasive PCs filled in fame, permitting IoT to advance. The Internet of Things (IoT) is an expansive, comprehensive term that alludes to the boundless utilization of sensors and innovation to gather and send information from normal items and wearable gadgets. This data outfits AI with strong sign information frameworks.

Savvy study halls, shrewd learning conditions, and brilliant schools are all advantages of IoT. Remote networks, individual computerized gadgets, sensors, and virtual learning stages are all important for the meaning of a shrewd homeroom. A multifunctional versatile actual space fit to learn and educate is remembered for a clever learning climate. More individual information is caught in preparing rooms utilizing sensors inside the class, like cameras, mouthpieces, and movement sensors. Understudies and educators can likewise be conveyed by sensors to gather the information that is then shipped off to the college or foundation. Sensors are habitually consolidated in dress or other convenient things, for example, RFID gadgets connected to the actual body, for example, smart watches, armbands, shrewd glasses, cerebrum innovation testing, and gadget clinical observing.

Learning conditions or schools might be deciphered by frameworks and AI or human delegates once information from a savvy class has been gathered to further develop

instructing and learning. To put it another way, most existing mechanical scholarly classes are gadgets that act and report a lot of information. There is a couple of enormous-scope AI applications that utilize this kind of information to impact learning classes right now. Man-made brainpower-based savvy schools: there have been covers involving information in smart study halls to consequently modify the actual climate (lighting, cooling, and warming) in schools for preparing reasons.

These examples show the significance of concentration in the homeroom, as well as the way that learning settings and schools are still at their outset. Regardless of the way that AI innovation and devices are promptly accessible, most savvy homeroom applications are still in the testing and achievability stage. Brilliant homerooms in the future could highlight full-setting mindfulness, with each contextual analysis being identified and conceivably helped by constant versatile help.

An instructive specialist (PA) is a computerized or virtual figure that utilizes learning innovation to assist understudies with learning all the more real. It extends to incorporate the social, profound, and persuasive parts of innovation learning, as well as communicate with understudies in a characteristic human way. Dad can arrive in an assortment of shapes and sizes. Dad manifestation is generally usually utilized, and that implies that understudies can see an image of virtual characters or symbols that are reasonable or digestible and look like individuals, characters, creatures, or items on the screen.

PAs have kept on working because of late innovation headways. Virtual people are now and again created these days, because of a leap forwards in full of feeling processing which permits understudies to perceive feelings and change following weariness or dissatisfaction. PAs can participate in restricted intelligent collaborations with students utilizing their tongues. PAs might be utilized to connect with understudies in the homeroom as an encased robot. Later on, everybody will want to have various individual aides who will convey messages throughout their lives.

With training features, the contemporary PA is still fully utilizing technology possibilities. Advances in personal assistants or calling cards, such as Apple's Siri, promise that PAs will become more common. However, it is unclear whether PA with

a limited set of themes or more adaptable, conversational subjects will be more effective in the long run for teaching and learning.

Individual learning humans are imitated by intelligent tutoring systems (ITS). Human learning is typically regarded as a highly effective approach to training. Human guides will have in-depth and comprehensive expertise in the field to engage in complicated learning tactics such as discussion. All the more critically, viable educators should precisely assess their understudies' inspiration and information, and select learning exercises and objectives in light of the understudies' necessities. Educators can utilize outlines, tips, strategies, and fast criticism to assist understudies with tackling difficulties every step of the way while finishing all tasks. Students have not completely used human aides, as per studies, since they seldom seek clarification on some pressing issues and the aides are not faultless, for instance, in recognizing understudy confusions or fitting their curricular errands. Consider how it may very well be utilized by human educators, with shrewd frameworks that select academic and pedantic strategies, draw in understudies in customized learning discourse, and further develop after some time.

Preceding the appearance of ITS, PC preparing (CAI) was fit for giving direct criticism to understudies, however solely after they had answered questions. Concepts are given below:

- The UI is utilized to speak with the client. It may very well be written in regular language through conversation or without the utilization of virtual instructive arbiters [8][27][28].

- A pedagogical technique that stores a successful education and professional training strategy.
- Students' traits or activities in ITS were established under the student model.
- The system gathers data or concludes the student's abilities, including erroneous beliefs, emotions, and motivation.
- ITS can then use this information to diagnose and compare peer models, as well as deliver personalized assignments, recommendations, and feedback.

The various spaces of mental science, brain research, training, and data frameworks are encouraged to be concentrated on in these parts. ITS arrives in an assortment of structures. They contrast enormously in frameworks, and it's memorable essential that

not all things are AI-empowered. Its appearance might contrast with its substance. Others endeavor to show general point capacities, like independent understanding procedures, while others focus on subjects with numerical guidelines. The utilization of innovation in learning is a somewhat new field of improvement for software engineering, AI, and mental brain research networks, and it has prodded contention concerning moral issues around the gathering and utilization of delicate information. At last, it could be reasoned that it is a valuable device for teachers. What makes a hypothetically conceivable difference is presently seldom communicated in schools. They can successfully improve an understudy's learning inside or outside the homeroom where they exist in specific regions.

2.3 Research Summary

After reviewing some research papers I got to know about the importance of Artificial Intelligence in Education For nearly 30 years, the AIED academic community has debated the possibilities of AI education. As the utilization of information complex calculations, computerized reasoning, getting the hang of, handling limits, and innovation has ascended all over the planet, the conversation has moved to the global field of government strategy. There are various possible benefits, yet there are additional perils and open doors related to AI schooling and preparation. Subsequently, we should go with mindfulness and perseverance into another learning climate in which AI is utilized to help understudies and educators, as well as to plan understudies for the future in our current reality where AI assumes an undeniably significant part. There are a few significant pieces of the "AIED" framework. Those are - adaptive learning, learning environments, smart classroom, pedagogical agents, and intelligent tutoring systems. That relationship can be seen in below a structural figure:

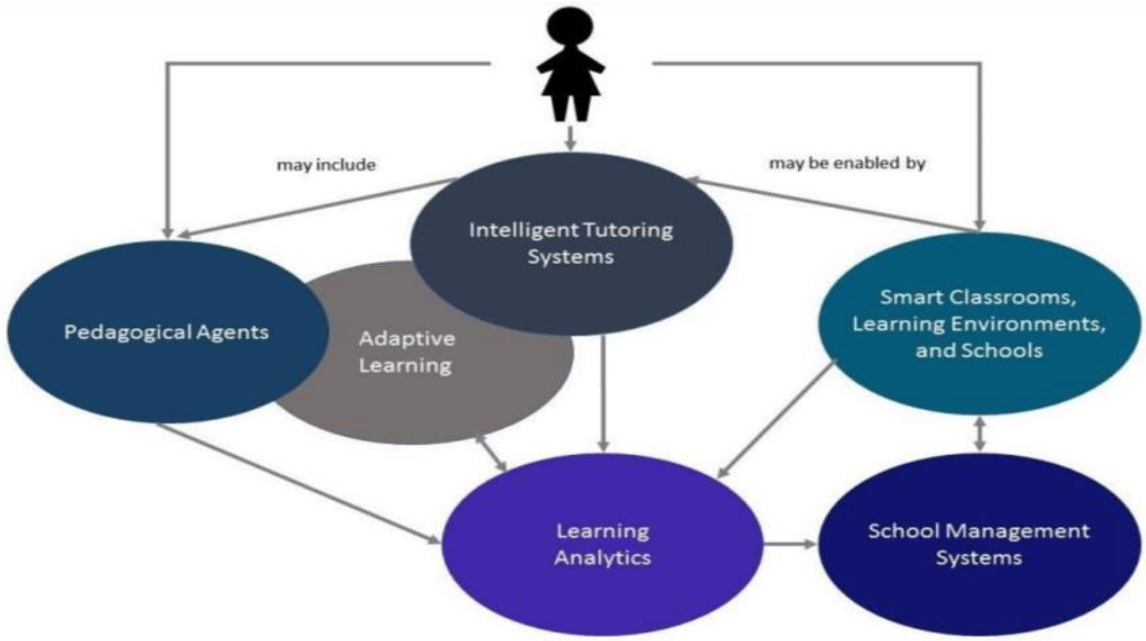

Figure 2.3.1: AIED Structural System

2.4 Scope of the Problem:

I've reviewed some papers & articles. There they mentioned & applied different approaches.

2.5 Challenges:

We have got a little amount of knowledge of Artificial Intelligence. So we tried to learn them very well. We also practiced more & more.

The various spaces of mental science, brain research, training, and data frameworks are encouraged to be concentrated on in these parts. ITS arrives in an assortment of structures. They contrast enormously in frameworks, and it's memorable essential that not all things are AI-empowered. Human guides will have in-depth and comprehensive expertise in the field to engage in complicated learning tactics such as discussion. All the more critically, viable educators should precisely assess their understudies' inspiration and information, and select learning exercises and objectives in light of the understudies' necessities. Educators can utilize outlines, tips, strategies, and fast criticism to assist understudies with tackling difficulties every step of the way while finishing all tasks.On the other hand we had no knowledge's which are used in the project.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Introduction

In this part, I will quickly describe the steps I took to accomplish our study project. Participants were asked to provide short or long narrative replies using online open structured surveys as a data gathering technique [47]. These unanswered questions provide more vital information to the researchers. The subjects will impact how students and teachers view AI and how AI might be applied in education. All of the replies were gathered online from people in various regions [40]. A low-cost, high-speed answer is demonstrated through an online survey, making the entire survey more convenient. Participants are thanks to the snowball of samples.

3.2. Data Collection Procedure:

First of all, a survey paper was created through Google Forms. The two Google forms are designed for teachers and students to utilize individually. The information is exported to Excel files, where the coded segments are counted. The online survey was completed by 580 persons, with 480 students and 100 teachers participating. Some of the students who took part in the survey are still in school, while others have already graduated. All participating teachers are currently employed in this field at the time of the survey. Teacher opinions are referred to as too, and student opinions are referred to as SO when referring to the remarks of the participants.

- **Questions of Teacher's form:**

1. What do you think about AI?
2. How is the Learning & Teaching Pattern by AI?
3. Robots are replacing teachers, what do you think?

- **Questions of Student's form:**

1. What do you think about AI?
2. How it will be if you get the teaching pattern with the teacher by AI?

3.3 Proposed Methodology:

For the coding part I took some steps:

- Data Collection
- Data Pre-processing
- Model Selection & Evaluation
- Get the best accuracy
- Result
- Testing

The complete dataset is split into two parts. The remaining 20% is utilized for testing, and the remaining 80% is used for training. The logistic regression, the algorithm is used to train the model using the training dataset during training. The test dataset is used as the input for testing, and the outcome is predicted.

In this research, we attempt to create a flexible user interface with visual concepts connected by a browser interface. Our aim is to use a machine learning model to classify master card fraud using data obtained from Kaggle as accurately as possible. Once we had done our initial research, we had a tendency to know that the naive Bayes model would provide the most accurate results.

- **Data Collection: I** took the data from our survey. Here we collect the data in a google form. We arranged questions. After getting the data, convert it into CSV format. I've to split the data into train & test.

	Designition	Thoughts_on_AI	If_AI_Become_teacher	Robots_are_replacing_Teacher_is_it_right?
0	Student	Useful	Improved	Not Worth
1	Student	Coming Trend	Improved	Not Worth
2	Student	Useful	Utility Matters	Not Worth
3	Student	Useful	Utility Matters	Not Worth
4	Student	Useful	Utility Matters	Not Worth
...	...	...	...	...
93	Student	Help on teaching	Lovely Teaching	Unclear
94	Student	Help on teaching	Lovely Teaching	Teacher may be Disappear
95	Student	Help on teaching	Lovely Teaching	Teacher may be Disappear
96	Student	Help on teaching	Lovely Teaching	Unclear
97	Student	Restriction Usage Help	Utility Matters	Teacher may be Disappear

580 rows × 4 columns

Figure 3.3.2.1: Head part of my Project

- **Data Pre-processing:** In this part, I cleaned the data. Missing values in the collected data could result in discrepancies. Preprocessing of the data is necessary to improve outcomes and the algorithm's efficiency. I must transform the variables and remove the outliers. To overcome these concerns, we use the chart function.

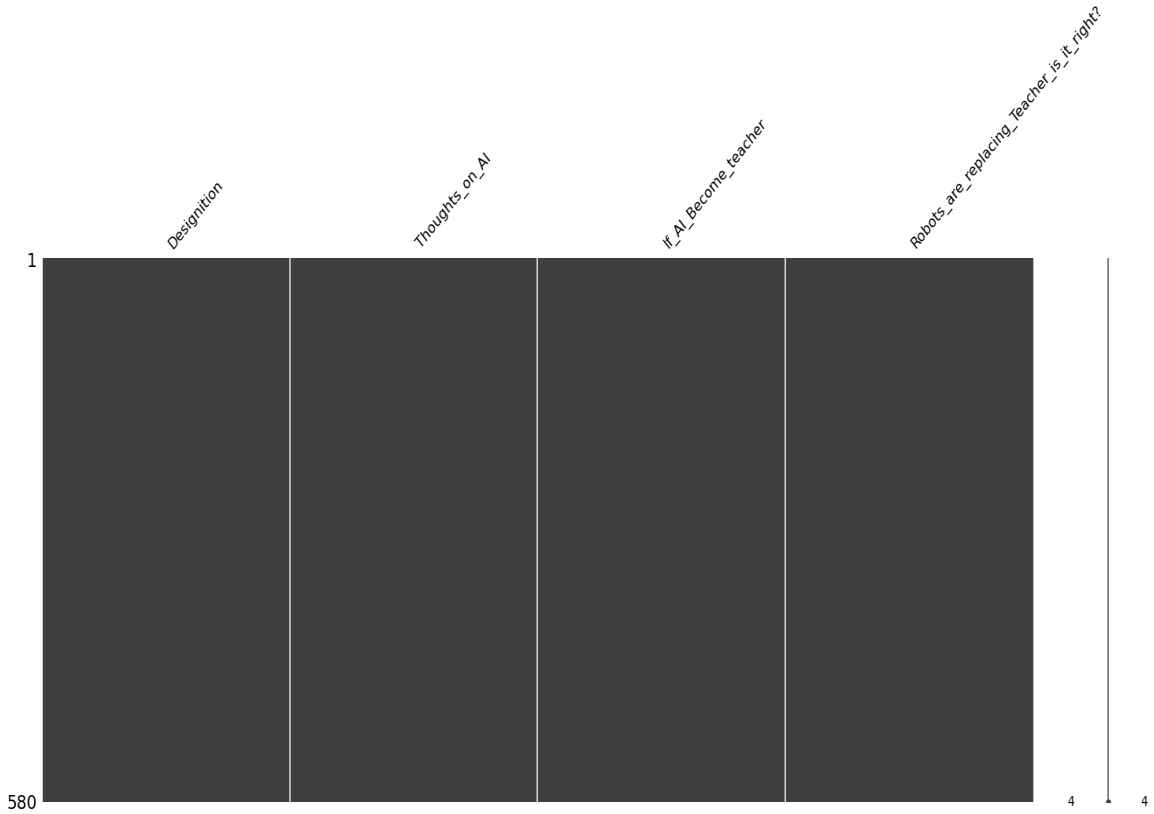

Figure 3.3.2.2: Train & cleaning

```
xtrain.shape, xtest.shape
```

```
((406, 3), (174, 3))
```

Figure 3.3.2.3: Train & test size

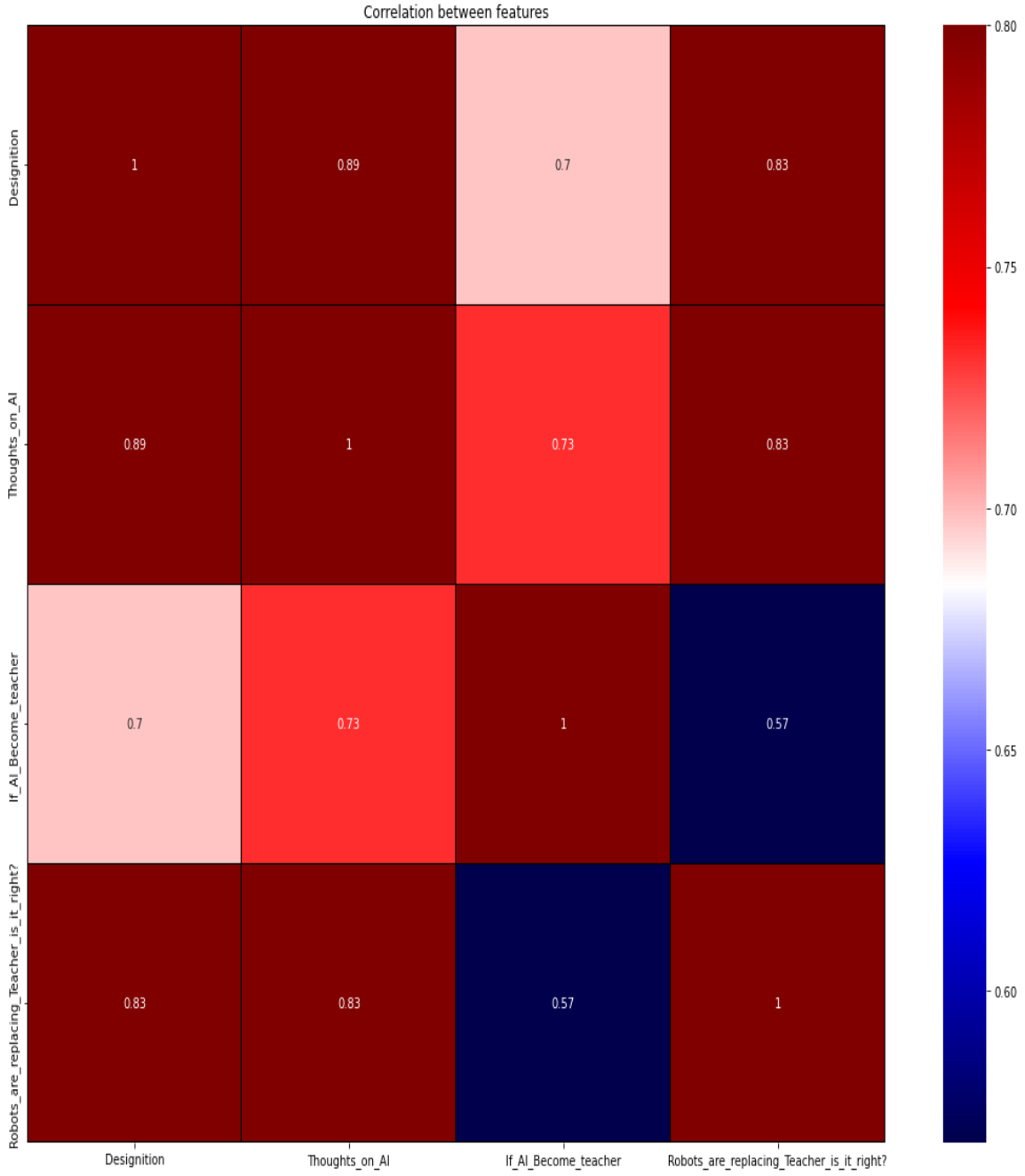

Figure 3.3.2.4: Correlation between Features

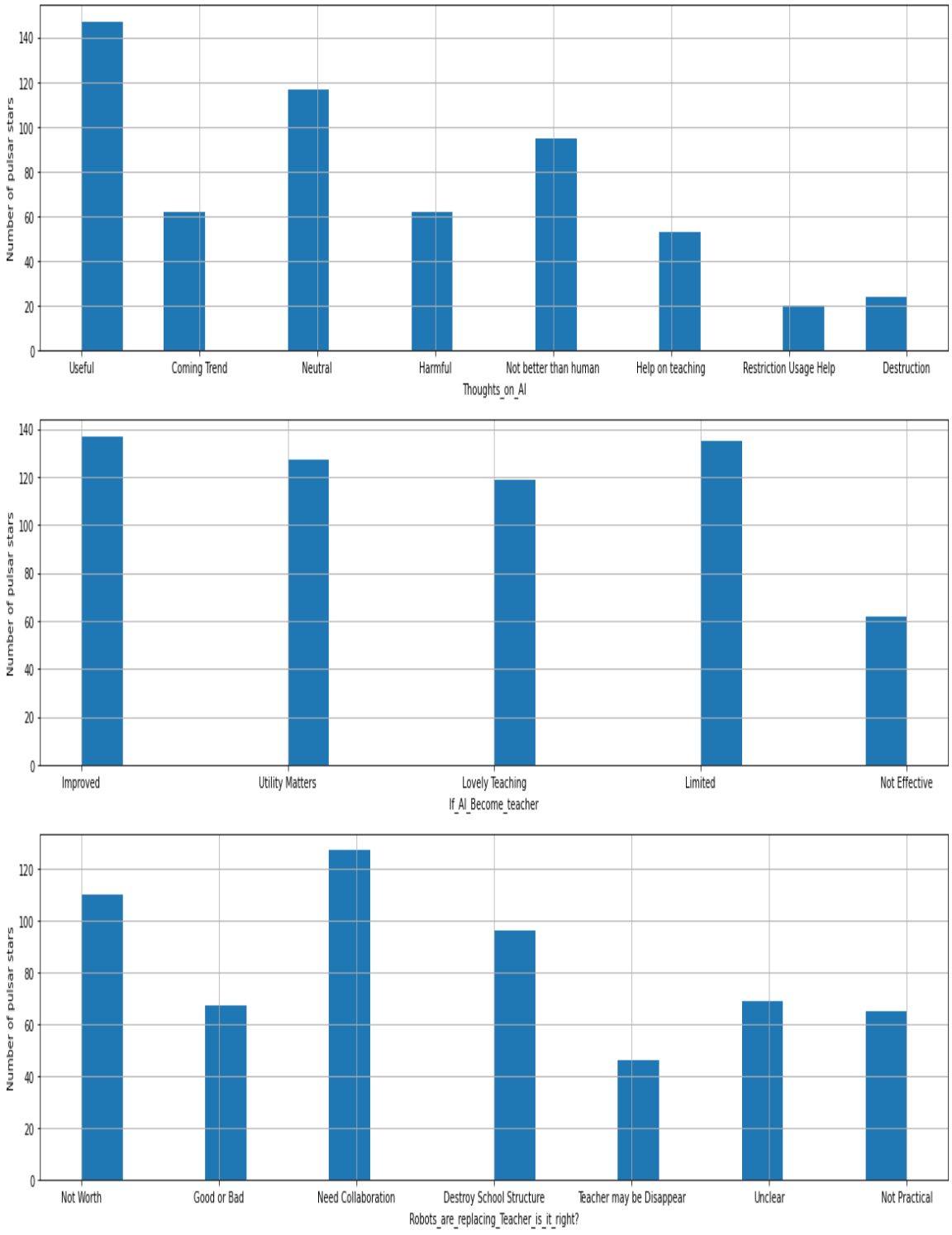

Figure 3.3.2.5: Histogram of Features

CHAPTER 4

EXPERIMENTAL RESULTS AND DISCUSSION

4.1 Introduction:

The two Google forms are designed for teachers and students to utilize individually. The information is exported to Excel files, where the coded segments are counted.

The online survey was completed by 580 persons, with 480 students and 100 teachers participating. Some of the students who took part in the survey are still in school, while others have already graduated. All participating teachers are currently employed in this field at the time of the survey. Teacher opinions are referred to as too, and student opinions are referred to as SO when referring to the remarks of the participants.

4.2 Result Analysis:

Only a few teachers are hesitant to embrace new technology. They will primarily compare their school experience to their digital education systems, and if they believe it was a beneficial outcome for them, why shouldn't the same be true for the present generation of students? In this study, a teacher's view of AI is depicted in Figure-4.2

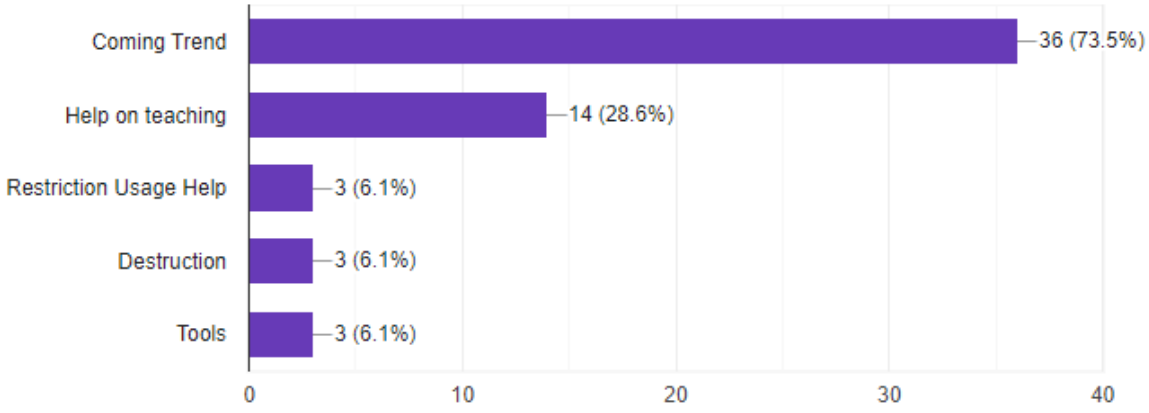

Figure 4.2.1: Perception of Teacher on AI (%)

According to a survey, we saw that most of the teachers feel that AI is a coming trend and fewer think it as a destruction. On the other hand, the spoken teacher thinks AI is a restrictive usage help and a useful tool.

TO-36: Yes, AI can be a coming trend. AI is the coming era. I'll be very useful to us.

TO-14: AI is helping us in our teaching and learning system.

TO-3: Some teachers say that the update tools of AI are making our teaching system very easy. Fewer mention it as a destruction.

TO-3: Only few participants think the best teaching profession is limited use.

According to figure 4, AI is beneficial to half of student participants. The coded segments' perceptions have proven to be beneficial rather than harmful. Some students believed it was both good and dangerous, while others said it fell short of human potential.

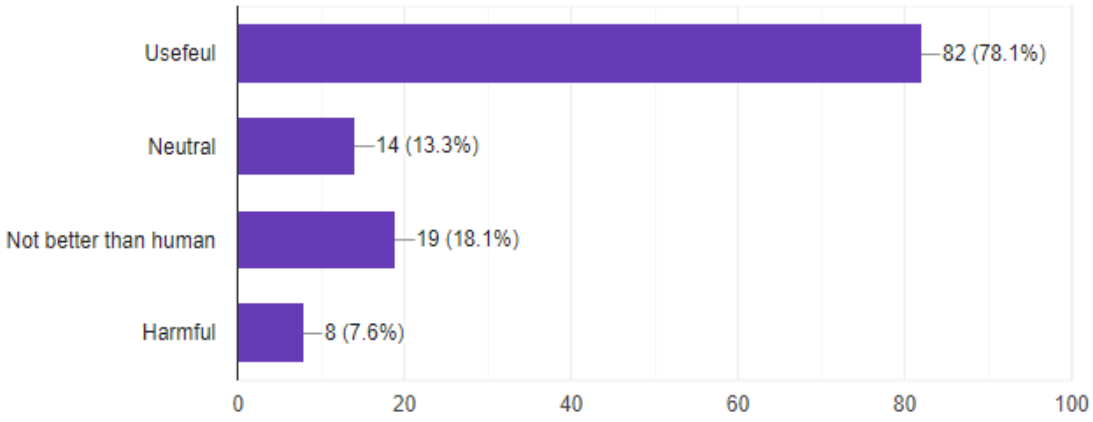

Figure 4.2.2: Perception of Student's on AI

SO-82: Most of the students mention AI as a useful thing. It has made their education system more updated and easier.

SO-8: Only 7.6% think that it'll be harmful for the education system.

While contrasting educators' and understudies' view of AI, we notice that in the two games, most of the players said that AI is an important innovation, and almost similar extent of members in the two classifications demonstrated that AI is destructive to mankind. Alex Beard, talking about the school setting where understudies learn with the assistance of AI, underlined AI's critical effect on the understudy's learning worldview. It is expressed that extraordinary consideration was made to clarify

everything for every understudy exhaustively. It's important to remember that everyone's impressions are different, and they're based on his or her knowledge about AI and how it's used. Individuals' awareness and experience inform them on how and where AI applies to education, which can lead to accurate AI adoption.

4.3 Next Generation with AI:

Participants were asked about teaching and learning patterns with AI-assisted teachers, however the majority of teachers stated that only a tiny fraction of participants would be ineffective, as shown in Figure 4.3.

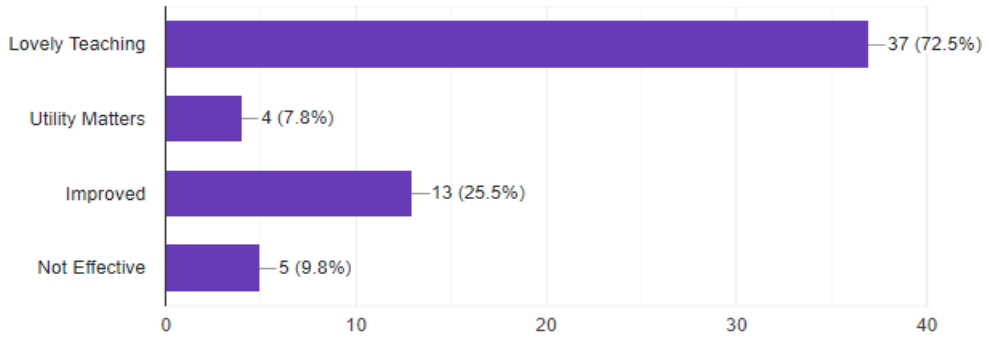

Figure 4.2.3: Learning and Teaching pattern by AI (with Teacher; %)

At the point when educators were asked the way that the showing model would show up assuming class instructors were completely supplanted by robots, virtually every one of them said no, except for a rare sorts of people who couldn't exactly understand how this model would function even without an instructor, as displayed in figure 4.4

TO-5: Some teachers think that robots build robots and this is the law of nature.

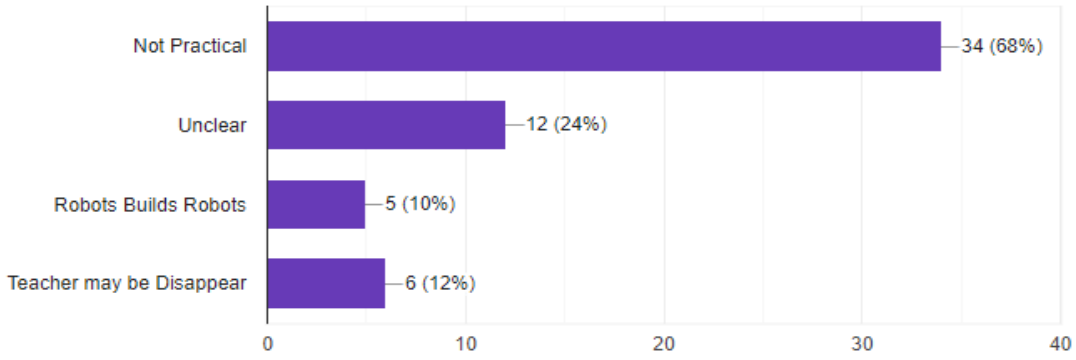

Figure 4.2.4: Robots replacing the teachers (teacher's perception ;%)

Figure 4.5 illustrates that when students are asked how they feel about a teaching approach in which a teacher enjoys AI, two-thirds respond yes and one-third say no.

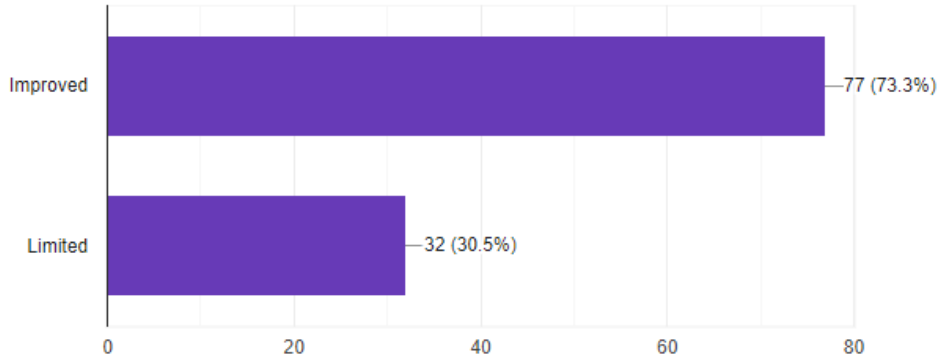

Figure 4.2.5: Teaching pattern with a teacher by AI (Student's perception ;%)

When asked if they wanted to see teacher-less robots totally replace classrooms, over 80% of students replied no, resulting in segments that do not stand, lose the human touch, and undermine the school structure indicated in figure 4.6.

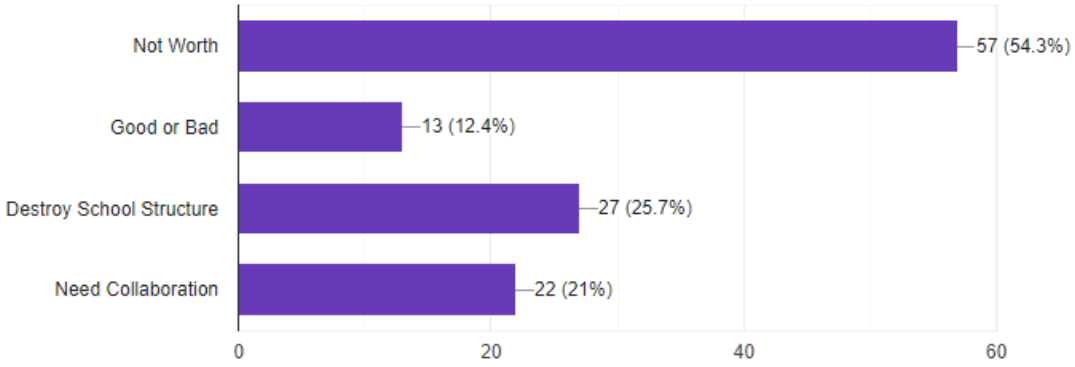

Figure 4.2.6: Robot replacing Teachers (Student's perception ;%)

That's what one student said. I feel there is a negative pattern when an educator can't be supplanted by robots since they are not adaptable enough for the understudy and the educator. Notwithstanding where innovation steps up to the plate, the understudy is dependably an instructor and requires the utilization of creative mind and gifts.

A comparison of teacher and student replies reveals that the first and second favor the employment of AI as a teaching aid. Furthermore, the majority of them despised the substitute teacher. According to the participants, an AI-assisted teacher can produce better results.

4.7 Result Discussion

Algorithm	Accuracy (%)
GBC	75
Decision Tree	68
Random Forest	70
SVM	66
Logistic Regression	67
KNN	73

Figure 4.7.1: Robot replacing Teachers

	precision	recall	f1-score	support
1	0.70	1.00	0.82	16
2	0.67	0.50	0.57	4
3	0.00	0.00	0.00	1
4	0.00	0.00	0.00	5
5	0.88	0.93	0.90	15
6	0.60	0.75	0.67	4
7	0.00	0.00	0.00	2
8	1.00	1.00	1.00	1
accuracy			0.75	48
macro avg	0.48	0.52	0.50	48
weighted avg	0.63	0.75	0.68	48

Figure 4.7.2: Results of GBC

	precision	recall	f1-score	support
1	0.67	1.00	0.80	16
2	0.50	0.25	0.33	4
3	0.00	0.00	0.00	1
4	0.00	0.00	0.00	5
5	0.78	0.93	0.85	15
6	0.33	0.25	0.29	4
7	0.00	0.00	0.00	2
8	1.00	1.00	1.00	1
accuracy			0.69	48
macro avg	0.41	0.43	0.41	48
weighted avg	0.56	0.69	0.60	48

Figure 4.7.3: Results of Decision Tree

	precision	recall	f1-score	support
1	0.67	1.00	0.80	16
2	0.50	0.25	0.33	4
3	0.00	0.00	0.00	1
4	0.00	0.00	0.00	5
5	0.88	0.93	0.90	15
6	0.40	0.50	0.44	4
7	0.00	0.00	0.00	2
8	1.00	1.00	1.00	1
accuracy			0.71	48
macro avg	0.43	0.46	0.44	48
weighted avg	0.59	0.71	0.63	48

Figure 4.7.4: Results of Random Forest

	precision	recall	f1-score	support
1	0.62	1.00	0.76	16
2	0.00	0.00	0.00	4
3	0.00	0.00	0.00	1
4	0.00	0.00	0.00	5
5	0.88	0.93	0.90	15
6	0.33	0.25	0.29	4
7	0.00	0.00	0.00	2
8	0.33	1.00	0.50	1
accuracy			0.67	48
macro avg	0.27	0.40	0.31	48
weighted avg	0.51	0.67	0.57	48

Figure 4.7.5: Results of SVM

	precision	recall	f1-score	support
1	0.62	1.00	0.76	16
2	0.00	0.00	0.00	4
3	0.00	0.00	0.00	1
4	0.00	0.00	0.00	5
5	0.74	0.93	0.82	15
6	0.50	0.25	0.33	4
7	0.00	0.00	0.00	2
8	1.00	1.00	1.00	1
accuracy			0.67	48
macro avg	0.36	0.40	0.36	48
weighted avg	0.50	0.67	0.56	48

Figure 4.7.6: Results of Logistic Regression

	precision	recall	f1-score	support
1	0.71	0.94	0.81	16
2	0.67	0.50	0.57	4
3	0.00	0.00	0.00	1
4	0.50	0.20	0.29	5
5	0.88	0.93	0.90	15
6	0.40	0.50	0.44	4
7	0.00	0.00	0.00	2
8	1.00	1.00	1.00	1
accuracy			0.73	48
macro avg	0.52	0.51	0.50	48
weighted avg	0.67	0.73	0.69	48

Figure 4.7.7: Results of KNN

CHAPTER 5

IMPACT ON SOCIETY, ENVIRONMENTAND SUSTAINABILITY

5.1 Impact on Society

The effects of artificial intelligence on civilization are hotly contested. Many contend that AI enhances daily life by performing commonplace and even complex jobs better than humans can, making life easier, safer, and more productive. Others contend that AI increases the risk of identity theft, worsens racism by standardizing people, and drives up unemployment by costing workers their jobs. The effects of artificial intelligence on civilization are hotly contested. Many contend that AI enhances daily life by performing commonplace and even complex jobs better than humans can, making life easier, safer, and more productive.

5.2 Impact on the Environment

Due to the complexity of the network system of openness, sharing of resources, system, linking the variety, the uneven distribution of the terminal, network agnostic, and other barriers, computer networks continue to exhibit their distinctive benefits on AI system's training can produce over 250,000 pounds of carbon dioxide. In actuality, the application of AI technology across all industries results in carbon dioxide emissions on par with the aviation sector. Everybody thinks it is a normal issue. But it is not. So that's why I decided to work on it.

5.3 Ethical Aspects

The internet's media outlets have now become accessible to people of all ages. As a result, the conditions of the user limitations are no longer valid. Because there are insufficient security measures to distinguish between moral and social perspectives. One must be able to comprehend the overall context of a notion conveyed through platforms. In many circumstances, this is harmful to people's moral ideals.

5.4 Sustainability

- There are over 2.3 billion active internet-based life clients worldwide.
- At least two internet-based life cycles are present in 91 percent of large business brands.
- When they can't access their online life profiles, 65 percent of individuals feel uneasy and uncomfortable.
- It will be a helping hand for the researcher.
- Able to gain more knowledge about honey pots.

CHAPTER 6

SUMMARY, CONCLUSION, RECOMMENDATION, AND IMPLICATION FOR FUTURE RESEARCH

6.1 Summary of the Study

Human bias is as yet a staggering impediment in training, as well as, as recently demonstrated, another test with AI advances. To keep away from bias, the fate of AI in training will require frameworks that can assess work and tests utilizing laid-out headings and standards on the most proficient method to computerize consummation. As handling power and intricacy rise, AI frameworks will want to all the more likely gather and sum up the information, helping educators in their learning. Educational plans that are custom fitted to the person. Brightspace Insights, for instance, is another assistance that gathers, totals, and assesses information, permitting educators to secure understudies' knowledge into the total biological system of learning assets. Educators are commonly specialists in their fields; many have various degrees and frequently spend significant time in very unambiguous areas of understudy advancement and results. The issue is that essential regulatory work is habitually a troublesome undertaking of instructor understudy coordinated effort. Here, oversaw AI partners make the fundamental information to help educators in doing what they excel at: speaking with kids, and framing the eventual fate of study hall knowledge.

6.2 Conclusion

Computerized reasoning and its application in numerous parts of our everyday existence seem, by all accounts, to be on the ascent, as proven by many examinations. Computer-based intelligence started to affect the subject of training, going about as a helper apparatus to support the educating and growing experience. As indicated by the discoveries of the ongoing review, educators and understudies ought to dive deeper into how computerized reasoning could assist them with fortifying their instructive abilities. It was additionally found that utilizing AI innovation can yield unrivaled outcomes. A few stages and patterns anticipated the future development of AI training, which is both engaging and, in specific cases, unavailable under particular conditions. While contrasting educators' and understudies' views of AI, we notice that in the two games,

most of the players said that AI is an important innovation, and almost a similar extent of members in the two classifications demonstrated that AI is destructive to mankind. Alex Beard, talking about the school setting where understudies learn with the assistance of AI, underlined AI's critical effect on the understudy's learning worldview. It is expressed that extraordinary consideration was made to clarify everything for every understudy exhaustively. It's important to remember that everyone's impressions are different, and they're based on his or her knowledge about AI and how it's used. Individuals' awareness and experience inform them on how and where AI applies to education, which can lead to accurate AI adoption.

6.3 Recommendations

- It will be a contribution.
- More easier.
- More flexible.

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