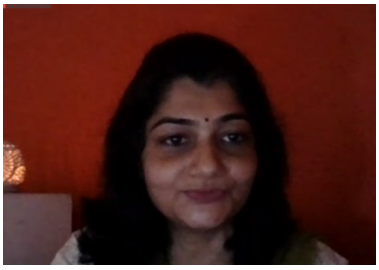
Four- Day Faculty Development Programme
Organized by
Machine Intelligence Research Labs, USA
In Collaboration with Bombay Teachers' Training College
(A Constituent College of HSNC University, Mumbai)

Report of the INAUGURAL SESSION – DAY 1

Date: 18/11/2020 **Time: 9.30 a.m. to 10.30 a.m.**

Report written by – Jacintha Coutinho



Dr. Neelu Verma Ma'am commenced in her Welcome note address by wishing everyone a day full of hope and abundance. She welcomed the Speakers and dignitaries of Machine Intelligence Research Labs, USA, in collaboration with Bombay Teachers Training College for these 4-day Faculty Development Series. Dr. Neelu Ma'am added by saying "Joining hands and listening to a prayer can lead to peace within". With these sentiments of prayer, we began with our college prayer.

Dr. Neelu Ma'am elucidated expressing the importance of Artificial Intelligence and how the CBSE has introduced AI Curriculum and almost 71,000 children are learning AI in the schools today. Artificial Intelligence is a new field and we as teaching fraternity need to develop these skills. MIR Labs have more than 1500 representatives from USA, Canada, Malaysia, Africa and India, beginning at Kerala.

Our Respected Principal Dr. Bhagwan Balani addressed the participants enthusiastically mentioning that this Faculty Development Program (FDP) is a blend of theory and practical. MIR Labs would be conducting theory and in the afternoon there would be hands-on experience with regard to Artificial Intelligence, enabling us to create digital content in the classroom, thus enhancing collaborative learning. Dr. Balani Sir thanked Dr. Pooja Mishra an alumni of BTTC for her initiative to introduce us to Dr. Ajith Abraham which made this FDP possible.

Dr. Neelu Ma'am thanked Dr. Bhagwan Balani for his words of wisdom and introduced Dr. Niranjan Hirandani, being a man behind redefining the Education scenario of HSNC Board. Dr. Niranjan Hirandani welcomed the Resource persons of MIR Labs, USA and to the BTTC Faculty. He congratulated MIR Labs, USA for reaching out to almost 105 countries in a period of 12 years, being a greatest achievement in Machine learning programs. He added how we have progressed adventurously in Machine learning that answers almost most of our questions and how Artificial Intelligence will enhance the learning experiences of Teachers and Students in the days to come and in our lives in this highly digital world.

Dr. Neelu Ma'am thanked Dr. Hirandani for always being a source of motivation to us. She then introduced Prof. Dr. Ajith Abraham from MIR Labs, with a PhD Degree in Computer Science from Monache University and a Director of MIR Labs, India, has reached the heights of success working in a multi-disciplinary

environment and has authored more than 1400 research publications and books covering various aspects of Computer Science. Currently he is the Editor and chief of Engineering Applications of Artificial Intelligence and serves the Editorial Board of more over 15 International Journals.

Dr. Ajith Abraham highlighted on the thrust of Artificial Intelligence on how the children can contribute through this in a larger scale in the years to come as teachers lead the children in today's age. With the example of the Navigation system, he simplified AI system through Netflix, YouTube or Alexa and streaming media through various types of google search. Though we have a library of knowledge, yet we need to filter 10% out of 90% on what we actually need in Artificial Intelligence, through a personalized mode learning where AI plays an important role.

Dr. Neelu Ma'am thanked Dr. Ajith Abraham for enlightening us on the everyday experiences that involve Artificial Intelligence. She then introduced Dr. Arturas Kaklauskas, a widely renowned person.

Dr. Arturas Kaklauskas explained on Academic Research Centres and various trends that need detection and prevention which can enhance to develop personalized digital Artificial Intelligence.

Dr. Neelu Ma'am thanked Dr. Arturas Kaklauskas and later introduced Dr. Vincenzo Piuri. In his video recording for the inaugural address, he inspired us saying that Artificial Intelligence brings all the aspects together. We as teachers, need to enkindle learning ability and teach the basics of Artificial Intelligence to our students, thus we can generate a future generation of professionals and researchers. This achievement can be our greatest reward as we light the lamp of knowledge together and keep the flame of Artificial Intelligence burning.

Dr. Neelu Ma'am thanked Dr. Vincenzo Piuri for his encouraging words in inspiring us on Artificial Intelligence. She then thanked Dr. Niranjan Hirandani, Dr. Ajith Abraham, Dr. Arturas Kaklauskas and Dr. Vincenzo Piuri for inspiring us through their words of wisdom in the inaugural address, thus we grow in the knowledge of Artificial Intelligence and make it part of our teaching learning process. She then welcomed Dr. Meenakshi Lath Ma'am to do the further proceedings.

TECHNICAL SESSION – MORNING – **Report written by – Yashvi**

Technical session 1

Guest speaker: Dr. Ajith Abraham

Before the start of the first technical session the guest speakers for the first session were introduced and welcomed by Dr. Meenakshi Lath.

The opening session was done by Professor Dr. Ajith Abraham on Role of AI in Modern Society. This session was all about giving detailed information on what is AI, its uses, it's types it's applications etc. Sir started the session by briefing about AI and it's importance in Fourth Industrial Revolution by giving examples like Growth in World economy, use of smart machines, computing power, driverless cars, cell reported traffic patterns, robot scanning etc. Sir also threw light on how ICT Revolution is changing the world continuously. In this session AI that is

artificial intelligence was compared by oxygen as it has been in use in almost all working sectors of life. Academic Disciplines that are important in context to AI namely Philosophy, Mathematics, Economics, etc were also explained. A small snap shot about the history of AI was also elaborated on by Sir. The next topic covered was about Core topics of AI. In all five important core topics of AI were explained by sir with the help of examples. Sir also threw light on types of AI namely Symbolic and Sub-symbolic and stating that Sub-symbolic is now more in use. The next topic followed by AI was Machine learning. A very deep understanding about AI, Machine learning and deep learning was understood where it clearly explained that Machine learning is a subset of AI and deep learning is a subset of Machine learning. A detailed information was given on various applications of Machine learning, followed by classification of Machine learning which is very important aspect. And the last type was Reinforcement learning which is indeed the most important one and was explained thoroughly by Sir. The session did not end here various success stories of AI were shown which were present in all sectors from health to business to games to medical all sectors had success stories of AI.

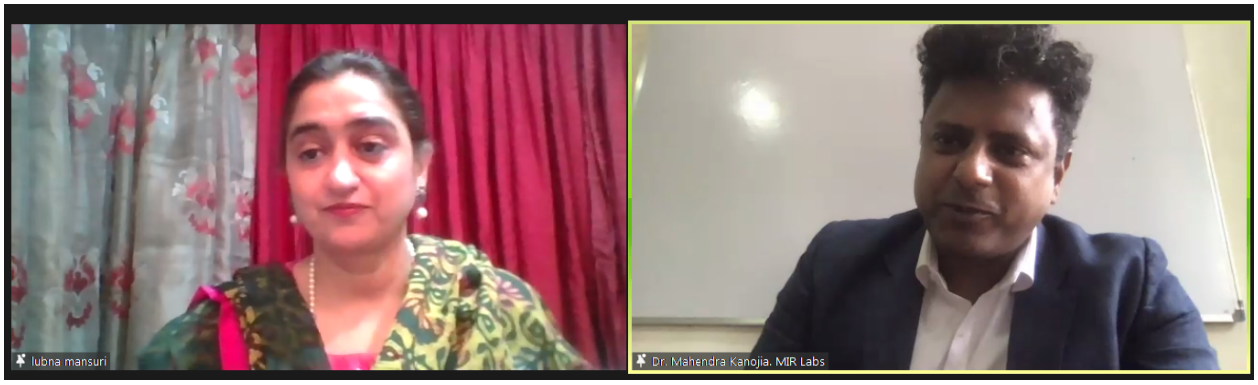
The session got over with lots of appreciation from the audience and participants. And was followed by the question and answer session where the guest speaker catered all the questions, doubts and queries of the participants. This session of AI where its concept, classification, uses, importance, application, advantages and disadvantages were explained was indeed an informative one.

After the first technical session got over there was a break where a cultural fillers was shown to the participants. In this cultural filler the state of Tamil Nadu was shown as a source of eduternmaint.

Technical session 2

Guest speaker: Dr. Mahendra Kanojia

The second technical session for the day was started by an brief introduction of the next guest speaker Dr. Mahendra Kanojia and was given by Dr. Lubna Mansuri.



The topic of the session was Problem Solving Using AI. Sir started his session by a very interesting quote which goes as "If humans can then technology can". An elaborate not on what is AI problem solving was given by Sir.The entire session was based on how real life problems can be solved using

AI. And was divided to in various sections starting with characteristics of AI which is a very crucial topic to know as characteristics of the problem solver are known then it becomes easier to solve the problem. The next important topic was challanges faced by AI while solivng the problem. Followed by these two topics was the main topic which included the Problem Solving steps. And this topic was dealt by giving real world problem and the steps were explained in a systematic ways with the help of real world example. In between Sir kept asking questions on the topic he had taught which helped the participants to get more clear idea of the topic and participants answered the questions correctly which indicated that the concepts were thoroughly explained to the participants. The three aspects include firstly we have to define the problem then analyses the problem and lastly generate the solutions. The concept of AI agent was explained in detail followed by the seven components of AI problem solving. These seven steps if applied properly then any problem using AI can be overcome and solved. After these seven steps sir also threw light on Search Techniques where two techniques were explained using example.

Lastly to make the steps more clear Sir gave an example of 8 Puzzle Problem which was solved using the seven steps.

The session got over with a lot of appreciation by the participants and was then followed by question and answer session where the questions and queries of the participants were answered by the Dr. Kanojia. And the two sessions came to an end followed by the Lunch break.

TECHNICAL SESSION – AFTERNOON – **Report written by – Jacintha Coutinho**

The Technical session for the afternoon on the 1st day of FDP began at 2.00 p.m. as Dr. Raju Talreja Ma'am briefed us on the morning session and introduced the Resource persons and Speakers of this Session. She continued introducing Dr. Vincenzo Piuri, Ph.D. in Computer Engineering, Milan, Italy and a practicing Professor of Computer Engineering. He is a man of great caliber and a recipient of many achievements and awards in Italy, USA, China, Japan and India.

Dr. Raju Ma'am continued introducing Dr. Mahendra Kanojia an HOD of the Department of Computer Science and a Founder of the elearning.com, an expert of Research of Computer Software and is exploring the field of Data Science and Data Analytics after receiving PhD in Computer Science on Breast Cancer detection using deep learning method. He is an emerging multi-disciplinary Computer Science Research Scientist.

She then introduced the teaching assistant - Mr. Ashish Chaturvedi who is Asst. Prof. of Dept. of Computer Science for 8 years. His is pursuing PhD in Computer Science in the domain of AI and Machine learning. She welcomed and thanked the Speakers for joining us to share their valuable knowledge.

Dr. Vincenzo Piuri enlightened us by sharing on Artificial Intelligence for Intelligent Systems and Applications. He explained how Artificial Intelligence is very relevant in Health Care for analysing images and extracting appropriate data and information from the images for the benefit of the patients. Artificial Intelligence too is very effective in Manufacturing Systems, Automotive and Transportation System, Human interface, Surveillance through biometrics techniques and CCTV camera, whereby we can detect criminals and culprits at Airports and important places. AI is very essential for Data Analytics and Mining and Recommendation

Systems. He concluded by saying that Artificial Intelligence is an opportunity for economic and social development and it enhances a better life for humanity.

Dr. Raju Ma'am thanked Dr. Vincenzo Piuri for sharing his vast knowledge and in a simplified manner.

The session was then continued by Dr. Mahendra Kanojia as he explained the Case Study on "Block Transferring Robot", where we need to identify the options which includes all the valid possible Path Cost for Block Transferring Robot. Later Mr. Ashish Chaturvedi, explained the second Case Study on "Word Formation" and "Solving Maze" the movements of the Close route and open route and the Path Cost of each tile.

Dr. Mahendra later answered all the questions by the participants and clarified their doubts. The Assignments were then given to the participants.

PROBLEM SOLVING USING AI - https://forms.gle/1bAFAHfCk2fPhyGJ6

Dr. Raju Talreja thanked Dr. Vincenzo Piuri, Dr. Mahendra Kanojia and Mr. Ashish Chaturvedi for sharing their practical knowledge on Artificial Intelligence and for responding to the queries of the participants. She continued thanking the MIR Labs Team, our Principal Dr. Bhagwan Balani, the Teachers of BTTC, the Technical team and all the participants for their co-operation and valued presence.

The session ended at 3.45 p.m. with the National Anthem.

Reports written by Jacintha Coutinho and Yashvi Gada, moderated by Melvina D'souza (S.Y.B.ED.)

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Report of the Technical sessions – DAY 2

Date: 19/11/2020 **Time: 10.00 AM to 3.30 PM**

"FACULTY DEVELOPMENT PROGRAM ON TRAINING TEACHERS FOR AI IN SCHOOLS"

Technical Session I- Introduction to Data Sciences

Dr. M. A. Ansari Sir commenced the session by greeting all the participants and the college prayer marked a holy start. Dr. M.A. Ansari sir gave the highlights of day one and reminded us of all the knowledge we had gained in that session. Sir also introduced the resource person Professor Dr. Vaclav Snasel, president of the VSB- Technical University of Ostrava, Czech Republic. Professor Dr.Vaclav Snasel sir started the session by first telling the audience about artificial intelligence and its purpose. He started with the very basics to allow everyone to first gain the required knowledge. A short history of artificial intelligence was also presented and a timeline starting from 1920 was explained in detail. He taught in a way that made the Youtube live chat come alive with appreciation. Sir also displayed a slide full of questions related to Artificial Intelligence like the future of AI and its purpose in information sciences research. He prompted us to think and be curious about this field. Dr. M.A. Ansari then introduced the second speaker Professor Dr. Ajith Abraham, Director of MIR Labs.

Dr. Ajith started his session with gratitude for all the people who have helped him in his field and to BTTC for this enriching endeavour. Sir first gave us a glimpse of Data Sciences. Earlier people used a term like data mining but now they have shifted to the term Data Sciences. The presentation was full of diagrams and this gave us a better learning experience. Sir gave a wonderful example and told us that cooked food can be easily digested. He said that AI is that cooking mechanism that allows data to be understood well. If the data is very less then no intelligence methods are involved, but a large volume of data needs assistance. Sir then proceeded to explain how mediation has changed over generations: how our world revolved around face to face meetings earlier but now everything involves a dose of internet and other machinery. This famous mantra was introduced to us: 'Gather whatever data you can whenever and wherever possible.' Sir explained in detail about data mining and taught us that data can be anything and can be in various forms like whatsapp chats, archives of tweets etc. The data mining methods, especially the predictive one, are crucial in today's scenario to find more information about Covid-19. There was also information on the quality of data and how

bad quality data can lead to downfall of projects. Fake data or wrong/duplicated data can cause grave problems which must be avoided at all costs. The platform was then kept open for a Q and A session. The session had made everyone curious about questions related to the databases presented, the fundamentals of data sciences and the various data analytics challenges.

Technical Session II- Getting started with Machine learning

The session was then taken over by Dr. Manisha Tyagi ma'am. Our General Secretary, Jahnvi Doshi, introduced the next resource person Mr. Subodh Deolekar, lead research engineer at Redx Innovation Lab. Sir started the session on machine learning by asking everyone to talk about their hobbies. The chatbox was flooded with answers like dancing, traveling, riding bikes, etc. AI generated music was then played for the audience and the eagerness to learn grew. The participants were asked to use google to find out the name of the song by just humming the tune. Sir also hummed the song and he asked the participants to guess. Then he displayed the search results of Google and explained how a simple hum led to finding the right song. Sir spoke about the Turing test and displayed a website called bot.poet where the readers are given sample poetry and they have to guess whether it's written by a poet or a bot. Sir then explained the three categories of machinery learning: supervised, unsupervised and reinforcement. A lot of questions were asked to keep the audience engaged and curious. While concluding the session, the learners were also given some sources from where they can brush up their information on Machine Learning.

Ms Shradha Jha presented the formal vote of thanks and a lunch break was announced.

Technical Session III- Machine Learning In Practice (Hands-on Learning)

The session was commenced by Dr. Mandeep Kochar , she gave a brief introduction on hands on learning on machine learning and then she introduced the guest speaker of the session, Mr. Sushant Shetty.

Mr. Shetty started the session with introducing the basic meaning of machine learning along with the participants. Then he showed the site teachable machine. He shared his screen and showed how to use Teachable machine. Mr. Shetty first explained the function and how this website makes machine learning so much easier for beginners. Then he starts a demo class and takes the participants through each step carefully, whilst explaining the function of each step. He uses the example of classifying three classes as three animals, viz. lion, tiger and deer. Then if the machine saw any animal it could directly sort it out into categories. Mr. Shetty showed different ways to export the program. Mr. Shetty also showed how to classify and sort different voice notes. Mr. Shetty gave an assignment to use teachable machine to develop a program using all three categories of imagine, sound and poster classification. He also shared the link for the assignment. The assignment was asked to be submitted by the evening.

Dr. Subodh Deolekar along with Mr. Shetty solved various queries asked by participants on zoom as well as YouTube platform. It was a very interactive and informative session.

Mr. Shetty also demonstrated Quick Draw, an application that could be used for classification of doodled images and drawings.

Supriya from ECEP department proposed the vote of thanks for the session. She thanked the speakers for the day, BIAP team, our principal and vice principal for all their efforts in making the session a great success.

At the end the national anthem was played and all the participants were asked to rise and pay their respects to the national anthem.

Report Written by Arnaaz Shroff (SYBED) and Priyanka Hasija (SYBED), moderated by Melvina D'souza (SYBED).

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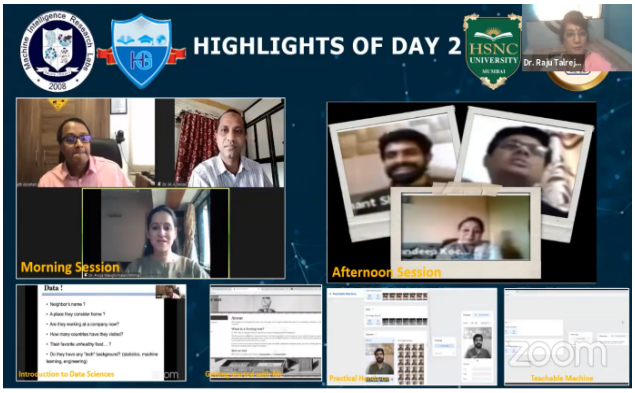
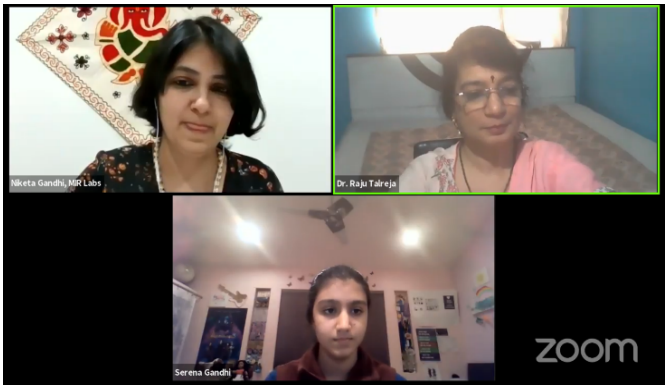
Report of the TECHNICAL SESSIONS – DAY 3

Date: 20/11/2020 **Time: 10.00 a.m. to 4 p.m.**

Session 1: Introduction to Programming.

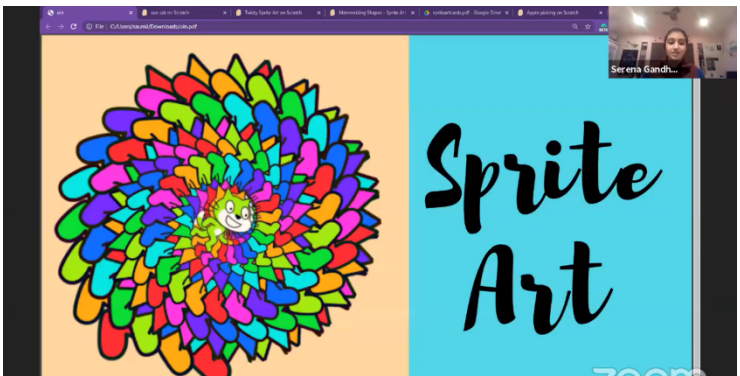
On the 20th of November 2020, Machine Intelligence Research Labs in collaboration with Bombay Teachers' Training College, conducted the third day session of the Faculty Development Program – 'Training Teachers for Artificial Intelligence in Schools.' The session began at 10:00am sharp with a prayer. Dr. (Mrs.) Raju Talreja then spoke about the highlights of Day 2 and the resource persons, Dr. Niketa Gandhi and Ms. Serena Gandhi, were introduced. Soon, Dr. Niketa Gandhi took over the session and began on the topic: 'Introduction to Programming'.





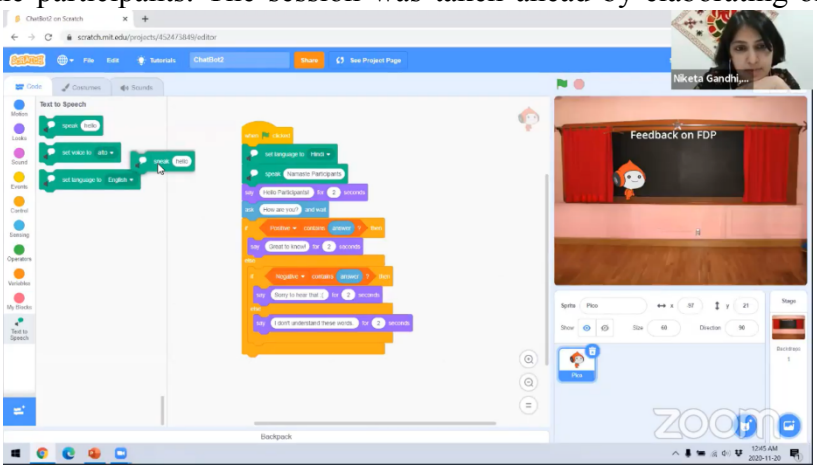
Participants were introduced to the website – 'Scratch'. Its various advantages were discussed with the participants of the webinar. Dr. Niketa Gandhi further went on to introduce the Resources for educators and the Resources for students that were available on 'Scratch'. The resource person gave the participants a brief overview about the website, thus making everyone well acquainted with it. She also provided the participants with practical knowledge by using 'Scratch' and enlightening each one with its application. How to choose the Sprites and how to go about with the coding, were also explained to the participants.

Ms. Serena Gandhi then presented a few of her projects that were prepared on Scratch. She had made use of beautiful designs and colourful graphics. Besides that she also provided information as to how easily such projects can be created. Ms. Serena Gandhi also created a game very conveniently, thus making it evident to the



participants that the website ‘Scratch’ is very user-friendly for users of all ages.

Dr. Niketa Gandhi further went on to show the participants various other projects available on ‘Scratch’. The Chat Bot, project made on Scratch was presented to the participants in a very amusing way and it caught the attention of most of the participants. The session was taken ahead by elaborating on the various projects available and the ways in which the coding of the projects can be viewed. A new project was prepared in the session by Dr. Niketa Gandhi, in order to acquaint the participants with its usage. Choosing of Sprite(s), coding of the project, using different languages, etc., were elucidated too.



This was then followed by ‘The Question and Answer session’, which was moderated by Dr. Raju Talreja. Dr. Niketa Gandhi and Ms. Serena Gandhi answered the questions, thus providing greater clarity to the participants. The session concluded with a formal vote of thanks, which was presented by Dr. Raju Talreja.

Session 2: How to teach Artificial Intelligence?

The second half of the morning session was moderated by Dr. (Mr.) Rajeev Jha. Ms. Melvina D’Souza, a council member of Bombay Teachers’ Training College, introduced the resource person - Dr. Pooja Manghirmalani Mishra.

Dr. Pooja Manghirmalani Mishra began the session and enlightened the participants on the topic: ‘How to teach Artificial Intelligence?’ She emphasized on the fact that as teachers it is important to understand and know about Artificial Intelligence before teaching it to the students. The resource person further went on and discussed about the teaching and learning process, wherein she highlighted about the Learning mode which had two categories – Surface Learning, Deep (In – depth) Learning. Emphasis were laid upon the objectives of teaching Artificial Intelligence and on Inquiry – based learning. The desirable features of Inquiry – based learning were also highlighted by the resource person. It was also emphasized that The Assessment Mode must be based on Inquiry – based learning. The participants were encouraged to interact, making the session very engaging. The steps involved in an Inquiry based learning model (the 5 E’s), its process, principles, were discussed with the participants. Within Inquiry based learning, Dr. Pooja Manghirmalani Mishra also explained the forms of inquiry. The differences between Traditional teaching and Inquiry based teaching – learning were discussed in a very interactive manner.

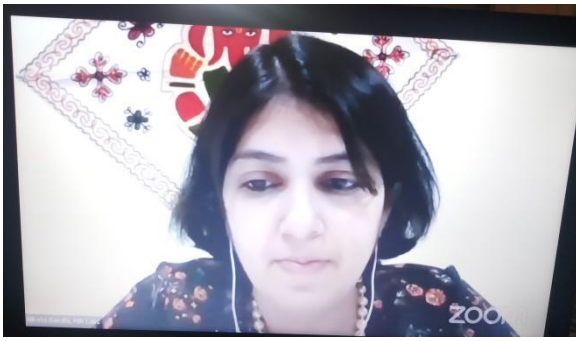
The Question and Answer Session began as the session came to an end, and Dr. Pooja Manghirmalani Mishra answered each question efficiently. Ms. Shraddha Jha, a student teacher of Bombay Teachers’

Training College, proposed the formal vote of thanks. The session was truly a one that was dedicated to teachers.

Report of DAY- 3 (Afternoon session)

The Technical session for the afternoon on the third day of FDP began at 2.00 p.m. So before we began our Afternoon session Mr. Naresh Menghrajani Sir gave a brief explanation of the morning session where we learnt basics of scratch programming from our resource person- Dr Niketa Gandhi and her student assistant Sarina Gandhi. He also highlighted that our resource person for today is going to ingnite our mind with hands on experience by practicing the scratch programming in detail. Mr. Naresh Menghrajani Sir continued introducing Dr Niketa Gandhi as Famous AI scientist and Author of Compassionate Artificial Intelligence. Sir ended the introductory speech with a beautiful quote "As more and more Artificial Intelligence entering into the world more and more emotional intelligence must enter into leadership" and handed over the session to our Resource person Dr. Niketa Gandhi.

Dr. Niketa Gandhi started with her afternoon session, firstly she asked everyone that if the participants is too working parallel using the Scratch programme application. As she had introduced the two lists i.e. negative and positive in the morning session using spike, now she was going to continue introducing the third list which consists of new words in the Scratch programme application. Dr Niketa Gandhi had a question round with the audience so that she can guide the participants while using the scratch programme application. Mr. Naresh Menghrajani Sir and the student teacher name Amatullah from ECCP helped Dr Niketa Gandhi in asking the questions from the Audience. She answered the questions of the audience by showing as a demo on the screen, so that the audience are able to understand better.



- She explained different other features like how to share and store the project in the FDP studio.
- She also continued explaining how to make use of more than one spike in a slide and how to make them in move at same time (showing the example of Elephant, Cat and Dinosaur on the slide)
- She explained how to write something on spike and how to make the spike character talk on the slide
- She showed a new feature name clone spinning and fish animated story game, which she explained in detail of how to go about it. She asked Sarina Gandhi her student assistant to explain about the apple catching game.

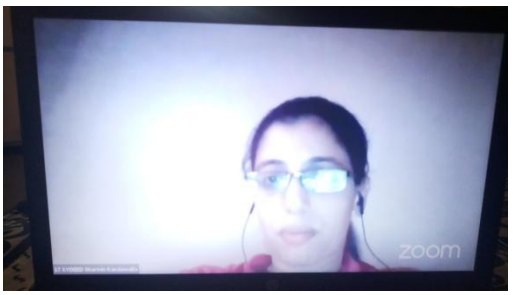
- She also explained how to put the dialogues in other language e.g. Hindi by using spikes.

Dr Niketa Gandhi then gave an assignment to complete in 3 days. Dr Niketa Gandhi and Sarina Gandhi were embraced with lot of Appreciation by the Participants saying as a wonderful session, enjoyed throughout the session, very informative, two stars of the session, excellent and have taken a lot of efforts. Dr Niketa Gandhi had also showed the few projects done by the participants and appreciated their work too.

Student teacher Sharmeen Kandawalla thanked Dr Niketa Gandhi and Sarina Gandhi for enlightening us with their practical knowledge on Artificial Intelligence and for responding to the queries patiently of the participants. She continued thanking our Principal Dr. Bhagwan Balani, the Teachers of BTTC, the Technical team and all the participants for their co-operation and valued presence.

The session ended at 4: 00 p.m. with the National Anthem.

Report written by:
Ms. Dianne Gonsalves (S.Y.B.Ed.) and Mubaraka Radhanpurwala (S.Y.B.Ed.) moderated by Melvina D'souza.



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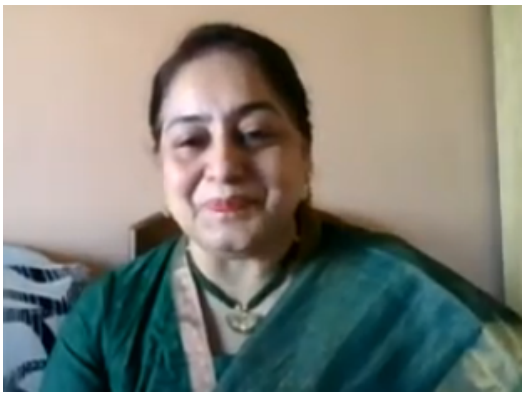
Report – DAY 4

Date: 21/11/2020 **Time: 10:00 a.m. to 3.30 p.m.**

The final day of a four day faculty development program on training teacher's for artificial Intelligence in schools began with welcome note by Vice Principal Dr Mandeep Kochar ma'am. In India we believe in the power of praying where it not only calms us but also creates a positive energy in and around us. The session commenced with the college prayer.



Dr. Mandeep Kochar ma'am gave the highlights of previous session of training teacher's for Artificial Intelligence in school which was conducted by Dr Nikita Gandhi from Toronto, Ms. Serena from USA and Dr Pooja Mishra. Ma'am thanked each of them for the yesterday's session on Introduction to AI programming.

<u>Technical Session – Morning</u>

Technical Session 1

Guest speaker – Dr. Nikhil Kumar Rajput

Dr. Mandeep Kocchar introduced today's speaker Dr. Nikhil Kumar Rajput who is currently assistant professor in Ramanujan College in University of Delhi. He also has a Ph.D. in computer science and is also assistant director in teaching learning centre of the college established under the ages of Ministry of Education Of India.

Dr Nikhil started the session with talking about the importance of artificial intelligence in content development. With the changing times there has been a change in how we look at education. Online education has become need of the hour so we need to keep updating ourselves. The main focus of Dr. Nikhil's session was How AI can be used in developing voice based content.

The resource person introduced the first tool which was Google Docs and how various features of Google doc can be used in creating content very fast and easily. the main focus was on The Voice typing feature of the Google docs an the translate document which help in creating content in vernacular language. Google Docs is very user friendly and can be used by multiple users to edit the same document. Also the translate

document feature can be used by teachers to create content in the vernacular language of the region. National education policy also demands that education should be provided in vernacular language to students.

The next tool introduced by the resource person was Otter.ai which is like Google docs with the added feature of pod casting so teachers can not only use their voice for writing text but it also saves an audio file which can be used in class.

The thought AI tool was Amazon Polly which is text to speech tool. In this the written text is converted into audio which can be used in various method in teaching. You can also choose from a wide variety of languages to record the audio. Another tool called Indian TTS which is similar poly and it also works on text to speech feature.

The last tool was InferKit which creates unique content of different topics. The content created is unique and not plagiarized. By using this tool it is very easy to create content on a particular topic. Rather than referring to 10 or 20 websites you can simply use this tool which gathers data from various different places to create a content which is relevant to the topic.

The resource person also introduced a tool which can be used to check the grammar in the content easily called Grammarly. A Question and Answer session commenced where the resource person answered all queries put forth by the participants.

The academic world is becoming more convenient and personalized thanks to the numerous applications of AI for education. This has changed the way people learn since educational materials are becoming accessible to all through smart devices and computers. Today, students don't need to attend physical classes to study as long as they have computers and internet connection. AI is also allowing the automation of administrative tasks, allowing institutions to minimize the time required to complete difficult tasks so that the educators can spend more time with students.

The morning session ended with the vote of thanks presented by Dr. Mandeep Kocchar ma'am.

Technical Session 2

Panelists – Mr. Rohit Panda, Mr. S.K. Singh, Mrs. Niharika Chaturvedi, Mr. Diwakar Mishra and Dr. Shefali Bharti.

Dr. Shefali Bharti

Mr. S.K. Singh

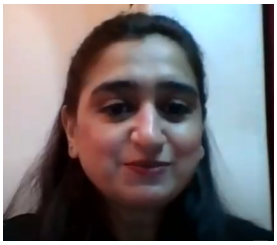
Mr. Rohit Panda

Mr. Diwakar Mishra

Mrs. Niharika Chaturvedi

Moderators – Dr. Ajith Abraham and Dr. Bhagwan Balani

Dr. Ajitha Abraham Dr. Bhagwan Balani

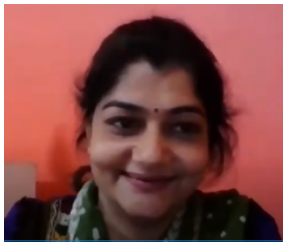


The second technical session for the day was started by and brief introduction by Dr. Lubna Mansuri ma'am to the panelists of today's session. The first panelist was Mr. Rohit Panda an accredited administrator and principal DPS Gwalior. He has more than 24 years of hands-on experience in school management.

Dr. Lubna ma'am also introduced Mr. S.K. Singh founder of global education leader forum which AIMS at connecting head to heart.

Dr. Meenakshi Lath ma'am introduced the next panelist Ms. Niharika Chaturvedi founder of principal and director of Indus international academy Lucknow a CBSE affiliated secondary School.

Dr. Meenakshi Lath ma'am also introduced Dr. Diwakar Mishra – Principal of kendriya vidyalaya Chandrapur Maharashtra. Dr. Mishra has a two decade of experience as PGT physics and 10 years of experience as a principal. He was awarded the National green School mentor award 2019 by GSP India.



Next panelist introduced by Dr. Neelu Verma ma'am was Dr. Shefali Bharti. She has 24 years of experience into education. she has been associated with international education IB and Cambridge curriculum for last 11 years and is currently senior manager academic operations and leading Cambridge assessment team at VIBGYOR group of schools.

Dr Neelu Verma ma'am also introduced the moderators for this session. The first moderator was Dr. Ajith Abraham director of machine intelligence research labs which is a non-profit scientific network for innovation and research connecting industry and academia – Seattle USA.

The next moderator was Dr. Bhagwan Balani I/C Principal Bombay Teachers' Training College a constituent college of HSNC University Mumbai.

In the 3 days FDP session there were a number of questions asked by participants. These questions have been compiled together and were addressed in this session.

The first question was put forth to Dr. Shefali Bharti by Dr. Abraham – How to apply AI for students from vernacular background. Who are intelligent but may not be able to comprehend in English.

Dr. Shefali elucidated how the AI is the power that will fuel India's digital economy. The new curriculum launched by CBSE k-8 covers both social and technical aspects in education. AI is the way of developing the 5 competencies – creative thinking, reasoning skills, problem solving, critical thinking and collaborative learning. Language conversion and translation tools as explained by Dr. Nikhil can be used to change the content from English to different languages. Dr. Shefali highlighted how the role of the teacher should be of a facilitator.

The next question was put forth by Dr. Bhagwan Balani to the panelist Mr. S.K. Singh. The question was - Are there any analysis done to predict the need of AI at school level.

Mr. Singh shed light upon how AI has been used not just now but two decades back. AI is nothing but smart instructions executed by machine. Out of 23000 CBSE schools 8887 have started coding in classes 6th onwards. Mr. Singh illuminated the real challenge faced by India in AI education is the infrastructure. 17% schools are only equipped with the right infrastructure for AI education. 10-12 yrs is the right age to introduce AI in schools when the child's mind is very sharp and at at age of 16 yrs the mind reaches the optimum. Mr. Singh also expound on the importance of present teachers to keep themselves updated.

The next question was for Mr. Rohit Panda. How to start implementation of the AI for children below 13 yrs of age.

Mr. Rohit felt that AI is been used without understanding the meaning or its importance. NEP has given advantage of using AI with students of grade 6 and above. The problem is understanding and implementation of the AI. Educators need to unlearn and relearn. The vision should be clear and the curriculum is open. The B. Ed. curriculum of ROTE learning is not enough for the AI students. Mr. Rohit feels we need to revamp the curriculum to include technical knowledge in B. Ed. programs. Every school should have stem education and design thinking.

The next question was for Mr. Diwakar Mishra. How AI can help specially abled students to learn. How teachers teaching these students can incorporate AI.

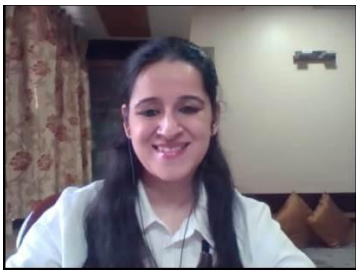
Mr. Mishra explained that teachers have a difficult time to match their teaching style with the students especially the differently abled students in their classroom. These problems can be solved with AI. Researchers have developed unique cognitive systems using AI that can help specially abled students. AI helps to identify the learning disability and therefore strategies to tackle these students. AI abled programs help to abridge gap in education of specially abled students. AI provides technology kits for specially abled students. Like Siri a voice based AI makes it easier to access any application on phone without clicking on it. Hearing impairment can be solved by using Microsoft translator.

Dr. Neelu Verma on behalf of MIR labs USA and BTTC thanked the today's experts Mr. Diwakar Mishra, Mr. Rahul Panda, Dr Shefali Bharti, Mr. S.K. Singh and Mrs. Niharika Chaturvedi for telling us about the AI in

schools and clearing the haze around AI. Dr. Neelu ma'am also thanked the moderators Dr. Ajith Abraham and Dr. Bhagwan Balani for putting forth the questions so effectively and being the connecting link. Ma'am concluded by saying "No one who achieves success does so without others".

AFTERNOON SESSION – **Report written by – Anju Konai**

4th day afternoon session of FDP began at 2.00 p.m. with Dr. Manisha Tyagi Ma'am briefing us on the morning session and introduced the Resource persons and Speakers of this Session - Dr. Pooja Manghirmalani Mishra & Dr. Rabiya Saboowala.



One of our volunteers Ms. Sharmin Kandawala introduced Dr. Pooja Manghirmalani Mishra, She has a PhD in computer science and is a teacher educator with an experience of 11 years at post graduate and undergraduate level and is currently working as an assistant professor in Educational institution of distance and open learning (University of Mumbai). She is associated with several international research organisations and institutions as guest faculty for PG courses such as statistics, information & communication Technology and masters in computer applications. She is an unyielding believer in lifelong learning.

Our another DlE.d volunteer Ms. Saima Motorwala continued introducing our second resource person for the day - Dr. Rabiya Saboowala, a teacher educator with over 4 years of teaching experience and affiliated with SNDT with University of Mumbai for teaching in Bed, BA & MA Education courses. She also holds a PhD in education and is also a fashion designer by hobby. Her area of expertise is lifelong learning, educational management and curriculum design and development.

This session mainly dealt with the incorporation of AI in lesson plans. Part 1 where Dr. Rabiya Saboowala explained about Inquiry based lesson plans. & Part 2 where Dr. Pooja Manghirmalani Mishra explained about AI part in our lesson plans.

Dr. Rabiya Saboowala enlightened us on Inquiry based learning system. She briefed us about the 5 Es used in this learning method i.e. Engage, Explore, Explain, Extend & Evaluate. She explained all these in detail and how we can use it in our classrooms to make our lesson effective. She gave an example of food web from science as an example. The lesson plans include the objective of the lesson, teacher's activity and students activity. She later took up queries by the participants.

The session was then continued by Dr. Pooja Manghirmalani Mishra as she explained how we can teach AI to the students. She even showed a sample in her lesson plan with topic on teaching basics on AI. She also helped the participants more on the assignment details. She later answered all the questions by the participants and clarified their doubts. The Assignments were then given to the participants.

Teachers have to prepare a lesson plan based on the content discussed in the three days of the FDP using the topic of the choice and incorporating the teaching-learning strategies discussed in the “How to teach AI?” session.

Dr. Neelu Verma ma’am called upon Dr. Ajith Abraham to share few words on the FDP. He appreciated the efforts of MIR Labs team and BTTC faculties. Dr. Neelu Verma ma’am later asked our ECEP volunteer to show the glimpses of the 4 day FDP program.

She continued thanking the MIR Labs Team, our Principal Dr. Bhagwan Balani, the Teachers of BTTC, the Technical team, student volunteers and all the participants for their co-operation and valued presence.

The session ended with the National Anthem.

Report moderated by: Melvina D’souza (SYB.Ed.)