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An Ingenious Approach to Create Compassionate Teaching and Learning Environment

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Abstract : The topology of Teaching is changing its wings from a vibrant classroom to an ingenious active-based classroom. In this context, up-gradation to build an adaptable Covid-19 system that revamps the traditional way of Teaching tautology to a generic active learning-based system has been essential aid in the topology of Teaching and Learning mechanisms. A conventional adaptive active learning system that justifies the topology needs and pedagogy builds a passionate Teaching and Learning environment. This paper illustrates a pedagogy selected to outline the OSI Model in the Computer Networks and vibrant the deliberate classroom environment to an active learning classroom environment that inspires the classroom teaching form to a compassionate Tautology of Active Learning environment. The literature suggests many ways to imbibe a concept, but literature misrecollects the pedagogy's selection according to the topology.

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1. Introduction

Teaching is a distinguished scenario where a Nation Development lies on the teachers in the society. The Covid-19 pandemic changes the forms of Teaching from offline to online and other various modes or platforms.

Active learning seems to be a deliberately distinguished term used by almost all the areas to build deep Compassion among the teachers. Active learning constitutes a pathway to select a pedagogy mapping with the topology. A couple of studies suggest active learning methods such as minute paper, think pair and share, and several approaches to intervene an adaption of a subject. It is practical in this context that adaption in Learning environments may seem dichotomous to create absorption of a topic-related context.[3]

The lead is the state-of-the-art topology that creates a conceptual classroom to a compassionate classroom. A conceptual classroom known as a traditional classroom goes with the lectures, and the vibrant environment in the lecture is Teacher Centric classroom. This classroom can never make interactive mental abilities and life-tacking abilities.

As this conventional classroom targets the Courses themselves, Outcome-based Education may not be achieved in this type of classroom. A compassionate Student Centric Learning Environment can constitute a topology to make a conventional classroom a smart ingenious classroom.

To intervene in an innovative classroom environment from a teacher-centric approach to a student-centric approach depends on the arbitrations of teachers in imagination and Intervention of results. The words of A.P.J Abdul Kalam, "Great Teachers emanate out of Knowledge, passion, and compassion," suggest Compassion's importance in the Teaching environment.

Compassion is also an adaption to view confess and concise a mark-up idea to a makeup idea related to the particular concept in all the outlines.

The pleasure of emphasizing learning in students is like cultivating a seed to a plant. It resembles a great effort of a teacher to make the makeup rules in the classroom and break up rules in the classroom. An essential aid to deploy the paradoxes seems like one of the ingenious aid to create an innovative, compassionate classroom.

This paper illustrates several ideologies of teachers and students to build a pleasure of Compassion in the students and the teachers to use passion to imbibe and cultivate the teaching-learning environment. This approach is a step forward to think pair and share the abilities to make a brighter ingenious classroom even with the usual teaching methods and suggest learning objectives with outcomes.[4]

2. Literature Survey

An idempotent principle to intensify the outcome-based Education comes with several sets of experimentations.

Literature suggests there are aids in Teaching and Learning tautologies. But the fortunate unfortunate thing over here is that aids are in vain unless aid becomes needed. Compassionate Teaching may not be achievable.

Experiments in Higher Educational Institutions

In the current perspective, the Educational needs of Higher Education persist in having an excellent strategical experimental analysis in the conservative presentation of a subject in the more profound and detailed perspective.

Several experiments are available to identify, analyze, and criticize student-centric and teacher-centric learning.

Flipped classroom

This method suggests as one of the aid to promote the active learning mechanism where students can learn through a video and tacking with the video. This methodology helps the Teaching of tautology in an outside class. The ideality and reality of using this experiment do not depend on the number of likes for that particular video. This approach makes the students grasp the subject's reality outside the classroom.

Project-based Learning

Another mechanism popular in the current scenario is Project-Based Learning which deserves to take part in the strategic building of prospective in attaining the critical skills to the set of students to impart the potential aid of Learning through problem-solving.

Game-based Approach

The paper," Student Learning Centric Methodology: An aid to Innovative Teaching and Learning Process." The author suggested an experiment related to the OSI Reference Model as a game approach and clustered the two groups as the group who are familiar with the game-based approach and the 2nd group as the group who are not familiar with the game. The two groups are clustered with a Zigsaw approach, producing the results.

This sort of experimentation helps the learners identify and develop the critical thinking prospective in the students.

This paper suggests a game-based pedagogy to impart learning as a matter of enjoyment.

Of all the above Strategical Learning perspectives, the central approach inhibits Bloom's taxonomy. Bloom's taxonomy is in the below figure(1).[2]

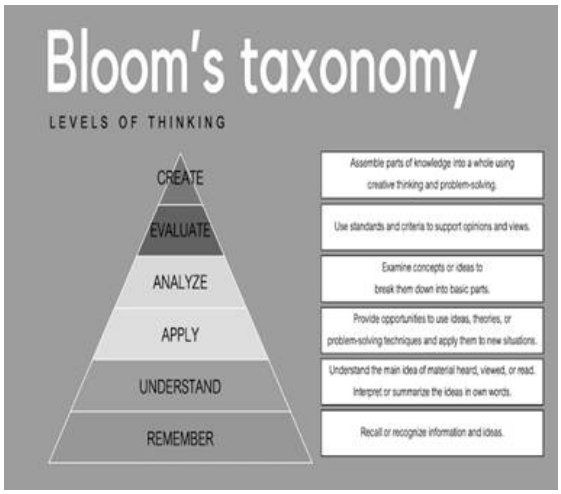

Fig. 1: Bloom's Taxonomy

Bloom's Taxonomy is the aid to build a student perspective and introspection into an innovative learner. The following are the phases

1. Remember: This phase makes the students remember the subject constraints.

2. Understand: This phase to think a more profound and broader subject matter.

3. Apply: This phase to apply the subject matter in various prospectives.

4. Analyze: This phase encapsulates the subject matter in deeper prospectives and constraints to know why it is happening.

5. Evaluate: This phase procrastinates to verify the identicality of all the dimensions whether the application works.

6. Create: This phase creates a few more innovative interventions on all the applications created.

All the dimensions mentioned in Bloom's Taxonomy play a critical role in evaluating teacher and student dimensions. The full dimensionality describes the learning role mapped with the gaining role. The Teaching and Learning scenario constitutes its building in implementing Bloom's Taxonomy.

3. Methodology

An essential role of a Teacher depends on the pedagogy that interrelates with students' attentiveness. The student's attentiveness and awareness in learning the specific topic and the teacher's perspective in evaluating the concerned topics in top-down and bottom-up approaches play innovative perspectives in developing measures and indigenous methodologies to build a teaching and learning platform.

In this gesture, the below is one methodology to imbibe the Compassionate Teaching and Learning perspective.

Learning Objective: To understand the various layers in the OSI Model.[1]

Learning Outcome: Every layer in the OSI Model is analyzed and applied to build an indigenous model.

This activity is modeled only for Section 3D students in the RGUKT SRIKAKULAM branch for 60 students. The basic theme is to understand the various layers and functionalities in the OSI Model.

The following are the various layers present in the OSI Model as shown in the below figure(2).

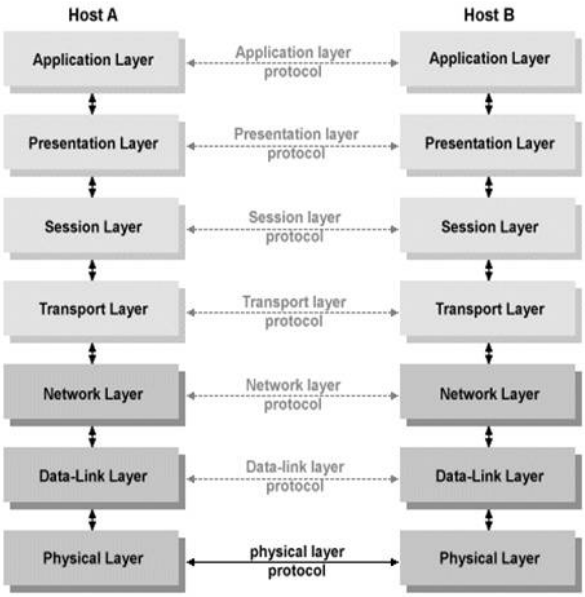

Fig. 2: Layers of OSI Model

Motivation

The motivation to do this activity is, to begin with, the end in mind. The activity provokes the teachers to develop a compassionate mechanism to visualize the learning syndrome in the annotation of a learning perspective to build an ingenious model encapsulated

with the layers and functionalities. The activity illustrates Compassion, probing, and generically applying each layer.

Activity

The aim is to understand the OSI Reference model from the bottom-up approach, the Top-down approach, and vice versa.

Below, figure 3 shows the activity that provokes a bottom-up approach.

Fig. 3: Bottom-up approach

OSI Refers to the Open System Interconnection, a model to conceptualize a network system. It was developed based on the ISO Standards in 1984.

1. Physical Layer:

Physical layer functionality to transmit bits from one node to another node, and this can be structurally projected in the student point of view as follows:

Initially, each student was asked to form a line in 7 layers starting with the physical layer and ending with the application layer, which follows a circle of males followed by a female student. The physical layer person has a mobile phone to send the message to the application layer. That message is reproduced as a physical entity via a pen refill without any cap shown in figure 3. The person in the physical layer also asked to send a message to the application layer's last node.

Fig. 3: Pen Refill

The above figure shows a pen Refill. Likewise, few Refills without proper caps are undersigned to the 1st person in the physical layer. The person needs to transmit the same to the next person ahead.

2. Data Link Layer

The functionality of this layer is to add headers and footers. This endorsement can be elucidated with the person sitting ahead of 1st person.

The 2nd student demonstrates the data link layer by simply giving the refill. The students have a probing aspect on what to do with the refill. They are acquainted with a couple of pen cap boxes to have a solution. The below is figure 4 below visualizes various pen caps.

Fig. 4: Various pen caps

The person sitting ahead starts to find the correct cap fit refill to make a pen. This syndrome can illustrate the functionality of the data link layer to understand the need for a header and footer. The person can transmit the same pen to the next person standing beside him.

3. Network Layer

This layer illustrates various paths and the moves to those nodes. Let us consider Google Maps as an example. Consider the following figure 5.

Fig. 5: Google Maps

The realistic example of this layer is a complicated task to show strategically. The person was sitting ahead of the data link layer node directed to move strategically to the person standing in the last node. This methodology illustrates a clear movement base in various forms like a map can be shown in the below figure 6

Fig. 6: Network Topology

4. Transport Layer

The responsibility of this layer is to follow various protocols.

There are two primary protocols in the transport layer: TCP and UDP Protocols.

To illustrate the practical implementation of the functionality of this layer. The person ahead of the node on the network layer should throw the pen to the person standing in the last node, which imbibes the ideology that must follow the rules and protocols shown below in figure 7.

Fig. 7: Person throwing the pen

5. Session Layer

The basic functionality of this layer is to synchronize the packets. To elucidate this layer, the person aside of transport layer who gave the pens must keep the pens in order which illustrates synchronization as shown in the below figure 8.

Fig. 8: pens in order

6. Presentation Layer

This layer deals with syntax, and semantic analysis of the information deals with two systems. It also deals with encryption and decryption mechanisms.

The person who collected the pen from the session layer must check whether the pens' order is correct before these pens deliver to the person standing in the last node. The person needs to sanitize the pens, showing the encryption and decryption functionality shown below in figure 9.[4].

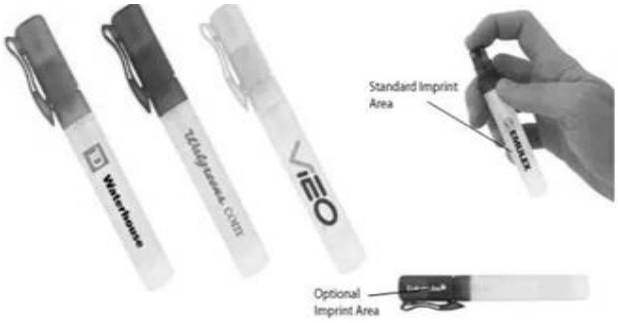

Fig. 9: Student sanitizing pens

8. Application Layer

In this synergy, the person standing, at last, must receive all the pens. After reaching this layer, the student asked to display the message that they got is "I Have received 3 packets." This layer illustrates the functionality that it consists of application protocols

like HTTP.TCP and FTP. After receiving the pens, the person must send a message to the person standing at 1st through mobile shown in below figure 9.

Bottom-up Approach

The Bottom-up Approach is illustrated in below figure 10.

Fig. 10: Bottom-up Approach

In the Bottom-up approach, key chains are assigned to every Pupil and asked to transmit them to the other node person without any loss.

The overall methodology illustrates the use of active learning classroom where a student learns with the participation of the activity and promotes a key to earn the knowledge. The overall activity describes a clear understanding of OSI model layers in the Computer Network along with the basic functionalities essential to build a Network path.

4. Feedback And Results

After demonstrating the above concept, consequent Feedback and a test are conducted on the questions above. These questions are confined only to the topic in the activity.

The questions in the test are as follows:

1. How many layers are present in the activity?
2. How many pens are there in the physical layer?
3. What are the basic functionalities performed in the data link layer?

There are around 60 students in the RGUKT Srikakulam campus in the 3rd year CSE D section. Out of 60 students in the class, 14 students participated in the activity. Below figure 11 shows the result of the exam.

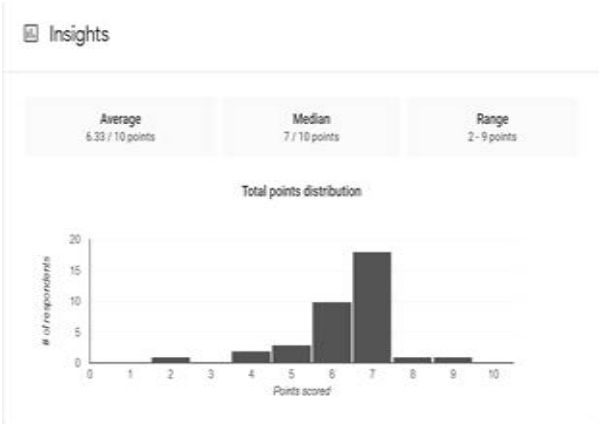

Fig. 11: OSI Model Test marks

35 students attempted the test out of 60, and the highest marks only a few got 9 out of 10. These results certify that the concept is clear to nearly half of the pupils in the class.

The concerned Feedback related to the above activity is also taken apart from the test on OSI Model. The few questions related to the grasping capacity and Innovative spirit are concerned in the Feedback.

The following are the few questions asked in the Feedback form.

1. Rate your experience in the activity.
2. Do you feel these activities help structure your career?
3. Is there any change in your vision before and after the activity?
4. Do you think these sorts of activities build your learning skill?

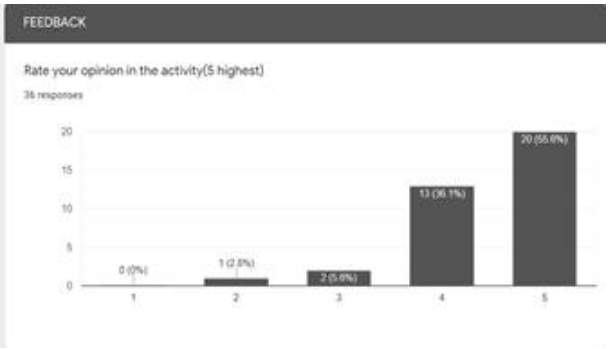

Fig. 12: Opinion on the activity

5. Rate your imagination in learning this activity?

The below figure 12 shows the opinion on the activity 35 people responded.

The above figure 12 shows the Pupil's opinions in the rating 0 as least, and 5 as highest and majority gave 5. The majority of the pupils gave a rating of 5.

Figure 13 shows the interactive subject ability, and almost 100 percent of pupils suggested this as a good activity. Below is figure 13.

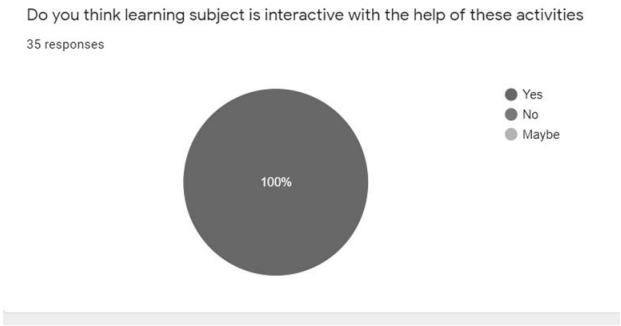

Fig. 13: Subject interactive ability.

The innovational spirit among the Pupil is built with the change of the vision. The below figure 14 suggests the change in the vision of the Pupil.

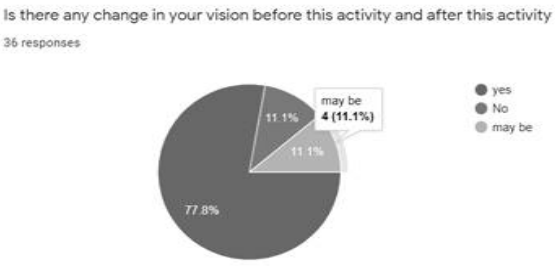

Fig.14: Visionary Change

Out of 35 Pupil who participated in the activity, around 77% of pupils suggested a tremendous change in their theoretical perspectives, which means there is a tremendous rapid visionary growth among the Pupil.

The remaining 25 students do not have an excellent network to give the results as they feel it is suggestable to say in the classroom.

Out of 25 students, 15 students responded in the classroom, stating that this activity helps in their visionary and subject addiction.

The above demonstration can be summed up as a video and given to students with the following YouTube links

https://www.youtube.com/watch?v=iHWXwW-YAr0&t=720s

https://www.youtube.com/watch?v=1olFrU2ofKM&t=46s

The above links can be visualized as a Blended learning perspective among the students.

5. Conclusion

The activity demonstrated in this paper illustrates the needs of the students and the teachers that Teaching reuires Compassion to build innovative skills among the students and in the development of a student growth to imbibe the concept. Compassion is a way of addiction touching down the steps towards the knowledge base confessing with the theory and practicality.This activity revamps the naturalistic ideology to imbibe the knowledge with enthusiasm and Compassion. Data-driven knowledge connection in the subject matter awakens the teachers and the students towards the active learning of the subject matter.This experiment promotes the need of active learning classroom and illustrates a gateway for the enhancement of Teaching and Learning environment in a compatible platform.

6. Future Scope

With the Intervention of new Technological developments in Computer Science and Engineering, future technological interventions can be made to evaluate the compassionate levels of Teachers not in Teaching but with future extraction strategies. This approach is termed an essential aid in Education because Teaching is an art by its meaning, but its extraction deals with many hearts.

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