

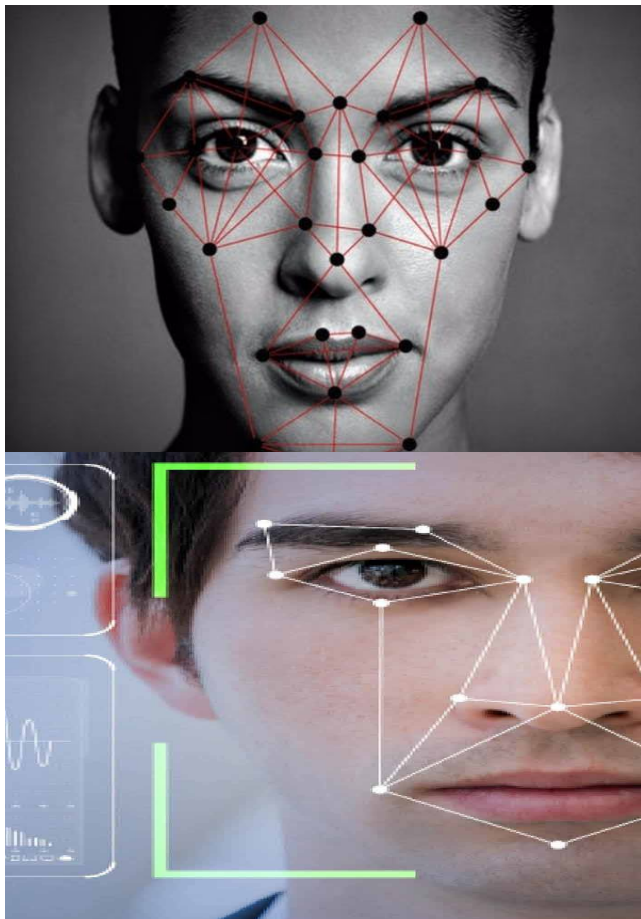


## 2.2 Tracking Facial Expressions

By using Facial Imaging software we can check for the human expressions including all emotions [2]. To track this facial expression different queries are needed to operate on data and a variety of data management tools are required. These data techniques used in this and the different environments used are called as “zones” [3].

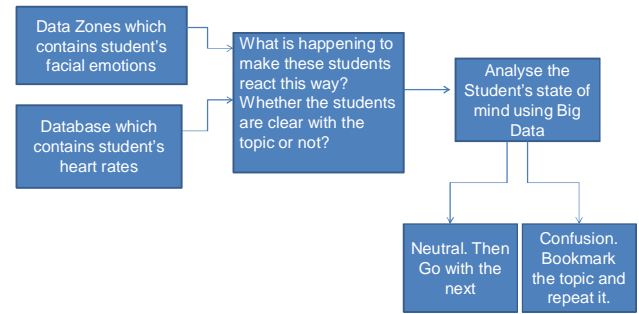
The facial imaging software analyzes different expressions of students as shown in the figure (2)[4]. After getting these data we may get different questions in our mind like what is the reason for this expression of a student? Whether the students are clear with the concept or not? To get answers for these questions we need to work out on the data using some queries and the data to be structured differently to “zone” concept comes into picture and data can put in. A data ingestion or operational data zone made up of different advancements that can best serve this kind of analysis [5].

1. A continuous investigation zone that distinguishes and follows up on results as they are occurring
2. An investigation, arrival or chronicle zone
3. An information stockrooms or information store zone monitored by different investigation machines



**Figure 2:** Analyzing Student’s Facial Emotions using Facial Imaging Software

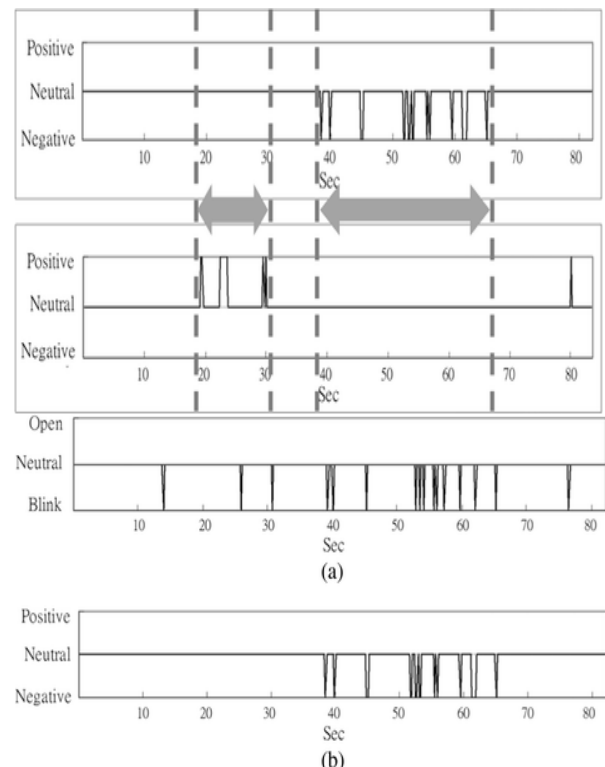
## 2.3 Analyzing Student’s State of Mind:



**Figure 3:** Analyzing the student’s mind of state using data zones

Based on the facial emotions stored in the data zones and the heart rate of the students we can estimate the student’s state of mind using Big Data as shown in the figure(3)[6]. If the majority of the students are in confusion state bookmarks the topic and explain it again. It may sometime depend on the academic performance of the student [7].

## 3. RESEARCH METHOD



**Figure 4:** Screen with student’s results

If the graph from figure (4) shows neutral then students are clear with the topic.

If it shows negative at that point of time students are not clear with the topic.

If the majority of the students are having negative map the teacher has to bookmark the topic and repeat the topic [8].

Using the clustering methods available in Big data analysis we can identify the behavior of the students [9].

Once if we identify the behaviors of students we can link them with the facial expressions.

#### 4.CONCLUSION

As we can see Big data and IOT can really improve the education. Most of the students get benefited by using this approach. Teachers also have so many tools to improve the teaching and can implement different techniques.

Big data solves problems in various fields including education. As the difficulty level is very less we can improve the education system by implementing new techniques.

But the only problem with this is the people are not aware of using this they may face some difficulties. Teachers should practice well and should make the students to use this tool.

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