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Development of E-Learning Model by Analyzing the Emotion Intelligence Factor of Human Using the AI and Machine Learning

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ABSTRACT: Artificial Intelligence is the most popular area of research which is now a days plays a vital role in almost all field of science. Today we are living in the era of technology. We are mostly getting all sort of applications for our basic needs which is powered by AI. Very recently, we came across the application Amazon ad on "Amazon Echo", a device which responds to the voice and answers all possible questions which are stored in the device. This is an example of Artificial Intelligence where the machine is smart enough to identify the request and produce the response[1]. Here the machine is going to analyze the emotion of the person and based on that, it finds the search result and accordingly it produces the response.It is the application where the search result depends on many factors like emotion, anger etc. In this case the finding of emotions is a very difficult task. To find the optimal range of the human emotions We have studied the responses of 1000 faculty members,having wide teaching experience, different designations such as Asst Professor, Professor and lecturers. During the analysis we also found that the emotion factors are also get vary gender wise. Ie, the emotion factor of a man is always less than women in certain case. In this paperwe are going to propose a learning model based on the approach of emotion factor.

KEYWORDS: Human Emotion, Emotion Intelligence, AI, Machine Learning, Recognition.

I.INTRODUCTION

As we know that, today the world is a digital world. Now a day the every task is going to be done using the digital mode and hence the educational field is also became a part of it. Learning online nowadays has been growing as a mainstream educational approach 'maximizing access to and interactions with various knowledge sources' (Lee, 2005) including contents and human resources using the Internet. In the present scenario the learning is to be done not by the help of pen and paper rather we need a learner model. Here we are going to discuss how the efficient learner model is going to be defined by using which the machine is going to learn from human[2]. The term E-learning is mainly used to refer the learning by machine as accordance to human thought. We might have gone through the amzon echo which is a well popular now a days for identifying the human request and according to which we are going to developed so many good and efficient model for our near future world. Today we are having so many applications around us which will helps our students starting form nursery to any higher education. To develop such efficient learning model, we have proposed a learner model which is completely based on human emotion factor. We also know that the human emotion is always variant with respect to the present situation, environment and phycology of human. Here we have found some data set based on locations of person, and several questions related to emotions required for making e-learning strategies on a five-point scale (1-strongly disagree, 2- disagree, 3- undecided, 4-agree, 5-strongly agree). Majority of the faculty members have not opted for other options except option 5 (strongly agree). Therefore, we have discussed only this option. This analysis was done by keeping in mind their role in the e-learning process of Modern AI approach.

II.E-LEARNING AND EMOTION

A. EXPERIENCED EMOTIONS

Rowe (2006) is a researcher who find the various identified emotions of human based on some experienced feedback of teachers and professor. He suggests that, the emotion factor is not always same for every person at every time. It depends on the situation and present state of mind of the concern person. According to him the emotion is maybe get affected in the lieu of anger, anxiety, happiness, fear, and sad situations. Kim (2006) and Astleitner (2011) were also another researcher who focussed on identifying 'emotions' experienced in the e- learning context.Kim (2010) was also reported the various emotions factors which is going to be get affected by **frustration, resistance, pride, relief, expectation, confidence, envy, and complex.**According to the Kim, these are the certain factor which mainly affect

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the human emotion and may causes the learning to get difficult in situational aspect. It confirms that the emotion is a always get vary and not always remains same for person to person.

B.TYPES OF EMOTION

As we know that that the emotion is a situational factor of human so, depending on the situation a emotion may be classified as either Negative or Positive Emotions. A negative emotion is a type of emotion where we mostly found the factor of sorrowness, depression, anxiety, complex etc. On the other aspect, the positive emotion is one where we are having the factor like confidence, happiness, proud etc.

By looking to the previous significant number of useful studies, we also found that, these factors are basically comingfrom a term perception[2]. A perception is a kind of factor, which have asserted that, the positive and negative emotions of a person is mainly due to the psychological bases of cognition and behaviour changes within the person to person. If these factors are get affected then definitely, the positive or negative emotion are becoming the superimpose a person. This has been also proposed and found by Kang& Goo, 2006; Kang, Kim, & Chong, 2011; Kim, Lee & Song, 2006;

C.ORIGIN OF PERCEPTION (THOUGHT)

The perception factor is mainly identified by nominating the emotion factor of human. Let us take the example of teacher and students. When the emotion is to be defined, it is very essential The effect of these emotions was widely variable, either more negative or positive, depending on the strength and nature of the emotion involved as well as its associated learning context.

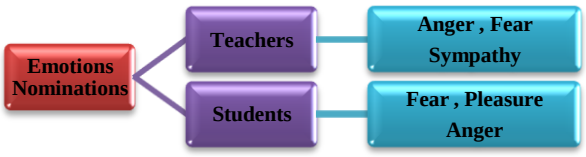

Fig. 1: Teachers and Students Nomination of Emotions

The Emotion nomination can be defined over the students and the teachers. A teacher may have the emotion like Anger, Fear, or sympathy for a student[3]. On the other hand, the student may have the emotion like fear, pleasure or anger depending on the response of the teacher. Hence, the nomination of emotion is bit typical on the given aspect.

D. MAJOR REASON OF EMOTIONAL REACTIONS

The major reason behind the emotion is feeling. The way the human feels the same emotion is get found the human. The feeling is a fact which is generated in course and the interaction in the environment are the causes of emotions more often than the technical environment. Vuorela and Numenma (2006) examined which events cause emotional reactions in students. In a collaborative learning environment, 'the course design in general' and 'interactions within learning environment' bring about emotions more than the causes relating to the functionality of technology. These emotions are the major fact of the feeling.

1. Emotions and Learner Model

Here we are going to propose the Emotion learner model. The emotion is a quick process focused on an event and consists of a trigger mechanism based on the relevance that shapes a multiple emotional response (Pasquier and Paulmaz 2005). The Emotions and Learner model is proposed as below which consist of three types of agents involved in the process. These are:

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- **Tutor Agent**: It is the first agent in the model which causes the charge of managing the courses and cognitive status of the e-learner. It is used to define the problem statement.

- **Style Agent**: It determines the suitable learning style of the e-learner (Derouich 2010). It is also used to define the learning algorithm for the emotion or feeling. Hence we need to classify the nature also using the style agent.

- **Emotional Agent**: It determines the emotional status. It is a superficial factor which is usually found in between the tutor agent and style agent. It is a type of the e-learner using the results of voice analysis and the feedback.

The major model is viewed on the basis of perception, control and action as below.

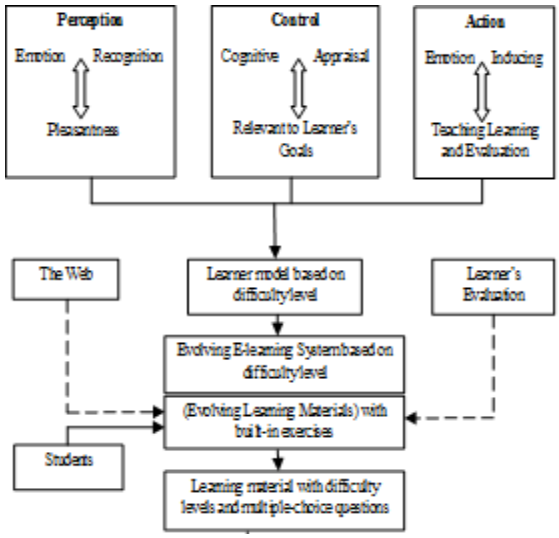

Fig. 2: Information Recognition System

2. E-learning Research

The E-learning Technology is full of complexities and difficulties. Bulfin et al, (2010) have surveyed various research activities and observed that descriptive research was commonly used by about 50%. According to him, the computation of emotion factor based on perception is very difficult[4]. He also suggested that the style agent for such problem statement is difficult to determine. They also concluded that about 32% researchers used collaborative research (as participatory methods), 25% comparative research, 25% experimental research, 15% design-based research.

3. Common Errors in E-learning Research

The E-Learner model may have the following set of errors which is found during the research process. In the style agent and tutor agent the emotion agent may suffer with following error if they are not be structured in proper way:

- A research-based problem which signify the use and its definition.
- In-depth reviewing of the specific state –of-the-art
- Enough sample and assignment to groups
- Appropriate methodology and powerful design
- Variables and data gatherings tools
- Usability of the current statistics.
- Cautions about inference
- Generation and possibility of application results.

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IV.RESULT AND DISCUSSION

We have conducted the above research on the faculty members having the various stages of qualification like Asst Prof, Associate Prof and Professor having different gender, age group, teaching experience, discipline and location. In order to solve the complexity level, we need to put a suitable questionnaire. As we know that, they are the most qualified and experience human so by considering them, we can get a good data set over the problem statement. When we apply the dataset over our model we get a concrete the data point. When we try to plot the points we get the following simulated graph for each of our suitable questionnaire.

The reason for picking faculty members from different streams and experiences was to have a realistic view of emotions suitable for e-learning and AI.

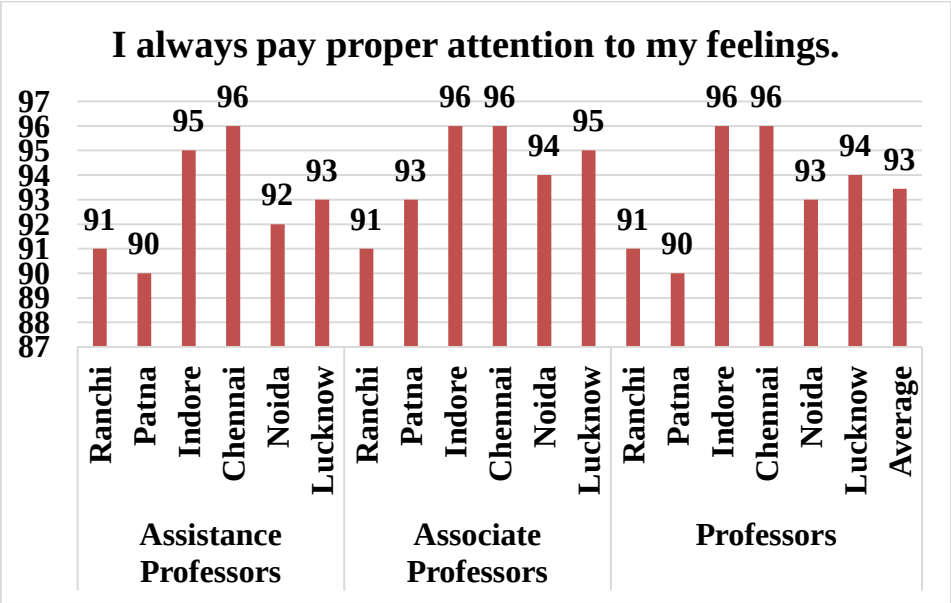

Fig-3 Responses of the Faculty Members to Question

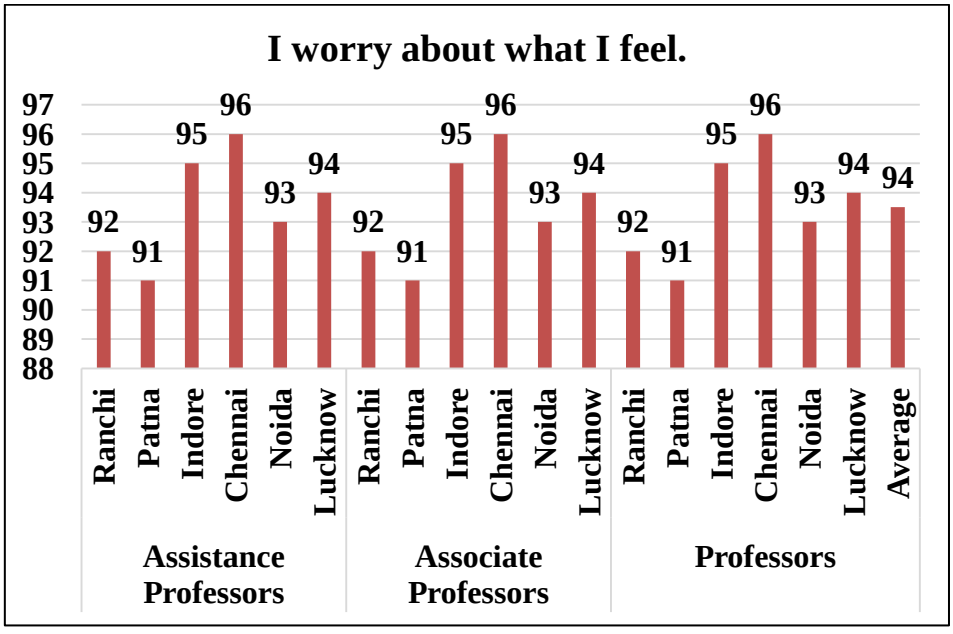

Fig. 4 : Responses of the Faculty Members to Question 2 (%)

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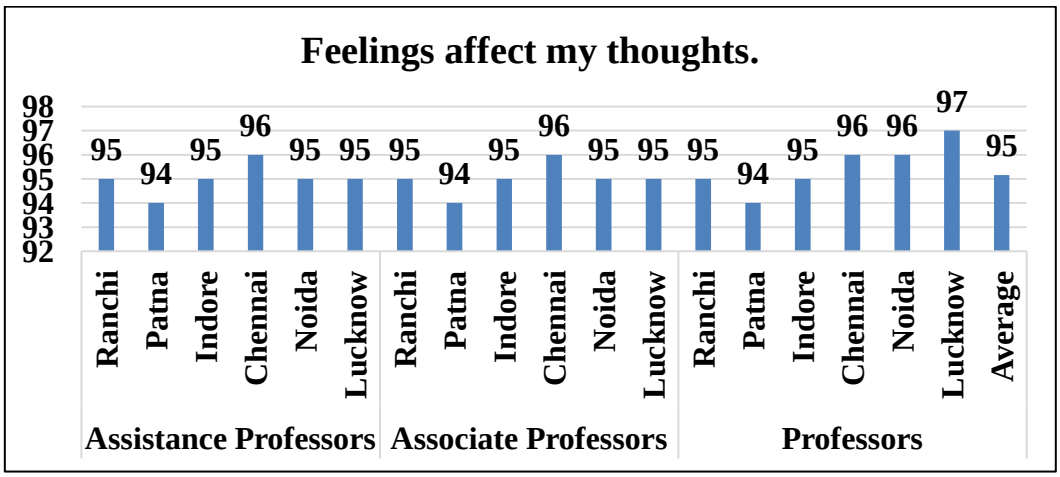

Fig. 5: Responses of the Faculty Members to Question 3 (%)

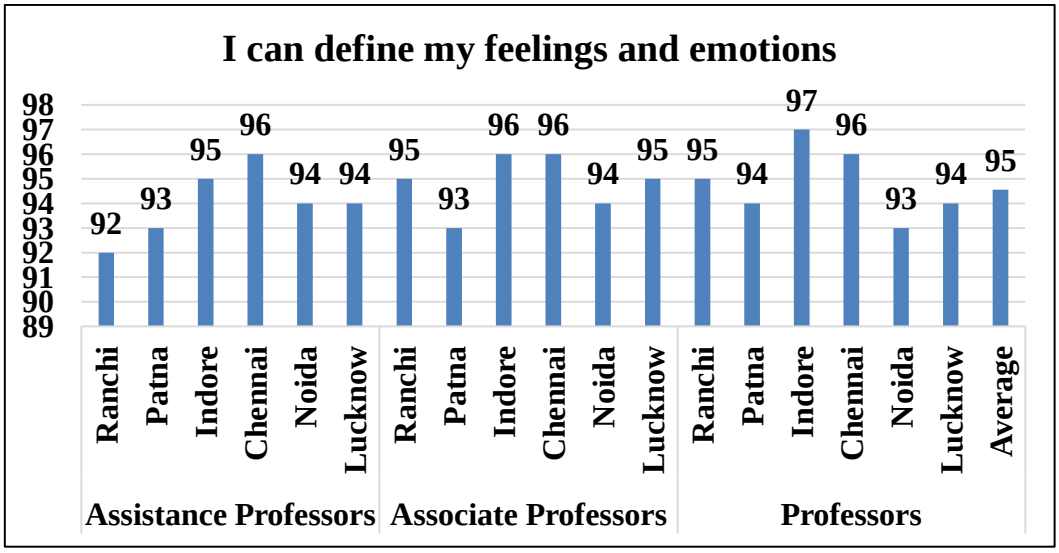

Fig. 5.1: Responses of the Faculty Members to Question 4 (%)

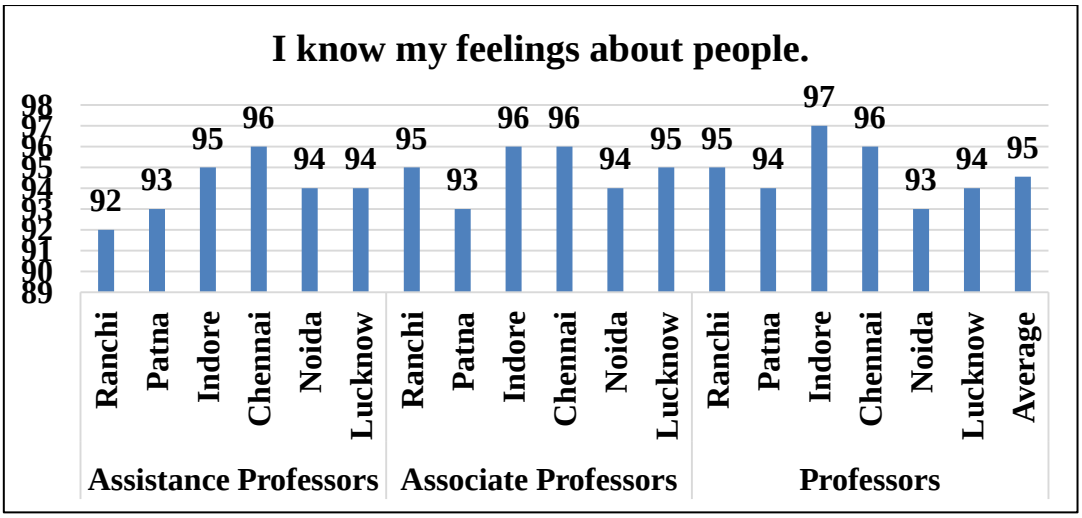

Fig. 5.2: Responses of the Faculty Members to Question 5 (%)

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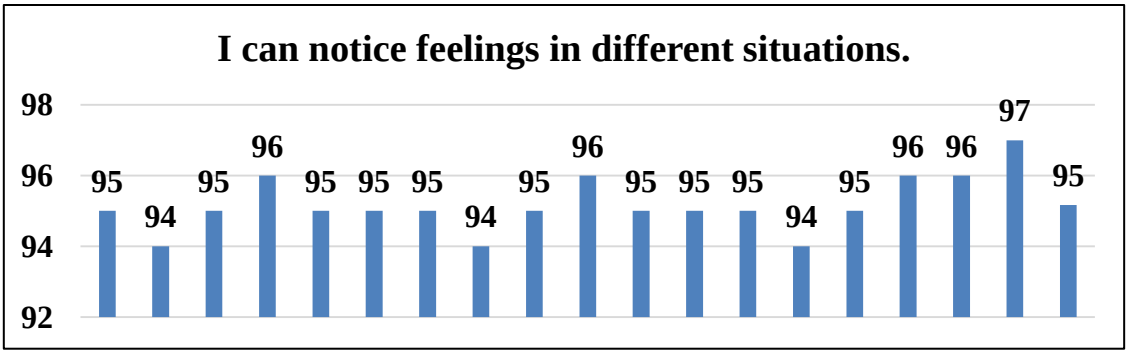

Fig. 5.3 Responses of the Faculty Members to Question 6 (%)

V.CONCLUSION

From the above survey and analysis, we conclude that, the perception is the most major factor for emotion analysis. As per our model if the perception for a problem is accurate then we can easily calculate the emotion factor and thus the problem can be solved in efficient way. But during the evaluation of emotion certain complexities are always found. As our model basically works on three layered structure such as tutor agent, style agent and emotion agent, so the perception also became difficult at certain cases. In our model the control and action model is also used to evaluate the problem statement only when the emotional factor value is correct. Hence for our model, The perception evaluation is a important aspect.

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