Mood Induction Using Visuals

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***Abstract*— The article deals with the experimental analysis of mood induction using visuals. Focusing mainly on inducing mood of positivity and negativity among selected candidates, this paper deals with the experimental strategies that were used, capturing the change in emotions that were observed and henceforth providing a detailed analysis. The techniques utilized for the experimental setting includes the presentation of various objects (balloons, posters and decorations) and bright colours for positivity induction, while use of dull colours, dispiriting posters, real-life situation (examination situation) and randomness (disarrangement of objects) for induction of negativity. This article also provides a commentary on possibilities of development of the method within psychological disciplines and implementation of the same to make a student psychologically strong.**

I. INTRODUCTION

In psychology, mood is a state of emotion that is evoked in an individual due to surroundings and circumstances. Psychological characteristics of a person being monitored is the prime force behind the influence of the actual experience of his emotion. The degree of influence of these emotional processes are altogether subjective and depends on the situational context and the present state of mind of the subject too. Hence, generalization of these concepts is tough. For modeling different real life situations, we need to artificially induce certain emotions in the subject, by techniques and procedures known as Mood Induction Procedures (MIP).

Based on studies, one can predict the trend in the subtle changes of mood and have an analysis on them. The studies on mood induction can be used as an effective data for research purposes based on emotion analysis and developing a generic idea on the psychology of a person.

Significant research efforts have already been made on mood induction using various experimental setups. However, most of them till now have focused on some small-scale scenario based dynamic experiments instead of static visual experiments to study the relation between cognition and emotions. Since experiments based on scenarios can only be conducted sometimes, we need to find permanent methods using visuals that are easily implementable over a large scale to provide an efficient mood induction procedure that can last for a longer time.

Mood induction plays an important role in controlling the psychology of an individual. A persons everyday mood affects his/her way of thinking, lifestyle and the Psychological Capital index (also abbreviated as PsyCap Index). Through this project on mood induction, we have tried to provide methods to improve the daily lifestyle and happiness levels of students using mood induction. The future implementation of this project is based upon using these methods and has been discussed in the report further. The experiments performed by us focus on the two major aspects of a students college life: classrooms and halls. Hence, by implementing these techniques in daily life, we can see improvement in the performance and the mental well-being of the students.

The experiments in the project were based on happy and sad mood induction on the students and a survey on how they felt about the same. One of the experiments was conducted in a classroom set-up, where we studied the effect of happy and sad visuals on the general mood of students and how it affected their concentration and their thought process in the class. In the other experimental set-up, we induced a happy and sad mood on students in their rooms and observed their reactions. Using these two experiments, we then propose a set of measures that could be taken to make classrooms and halls a happier place and also, understand what must not be done in a classroom.

II. METHOD

A. Research objective

The objective of the research is to carry out and document effective group induction of two primary emotions: joy and sadness, using two experimental setups and questionnaires and provide an implementation for the same in real life scenario.

B. Research sample

The first experiment in the research worked with a sample of 69 students and 2 Teaching Assistants. Out of the 69 students, there were 61 male and 8 female students, all aged from 18-20. They were divided into two labs of sizes 39 and 30 as per the division according to their roll numbers in the English for Communication (HS13001) laboratory. The experiment was conducted on Tuesday, 10th April 2018 from 9 am to 11 am in the Language Labs of the JCB Laboratory Complex, IIT Kharagpur.

The second experiment worked with a sample of 6 students divided into 5 students in the happy mood induction experiment and 1 student in the sad mood induction experiment. All the students were male aged from 19-21. The experiment was conducted on 15th April 2018 at E-219 at Radhakrishnan Hall of Residence.

C. Mood induction procedure

Two basic types of MIP were focused upon mainly to induce emotions. The fundamental criterion for using the specific methods was their feasibility in the environment. Both the procedures applied included the use of visuals. One was displaying materials like posters, photos and objects while the other included the display of a real life frightening situation (exam situation).

D. Data collection procedure

The assessment for the experiment was done by issuing a survey on the subjects. A questionnaire was circulated among the students involved which included subjective as well as objective questions and were asked to answer them. The objective questions were scaled in the scale of 1 to 10.

III. EXPERIMENT DESIGN

A. Experiment 1

The first experiment involved the use of classroom setting with the students as the subjects to analyze the essentials of mood induction. It was conducted during the English for Communication (HS13001) laboratory, where the students were divided into two groups based on their roll numbers. The induction in both groups took place at the same time under two different settings. In one of the laboratories (Fig. 1), a positive environment was induced using the following:

- Motivational Posters and Computer Wallpaper
- Balloons and Smiley Balls
- Motivational Quote on Whiteboard
- Other Decorative Elements

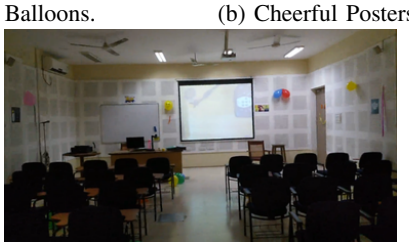
In the other laboratory (Fig. 2), for the induction of negative mood among the students, the following techniques were used:

- Depressing Posters and Computer Wallpaper
- Dim Lighting
- Disarrangement of Chairs
- Announcement of Surprise Lab Test

The necessary arrangements and setting was completed before the start of the class and the students were exposed to it as soon as they entered their designated labs. We sat at the back of the classroom to observe the reactions of students. In the end, they were briefly introduced about the purpose of the session and conducted a survey by circulating questionnaires.

(a) Balloons.

(b) Cheerful Posters.

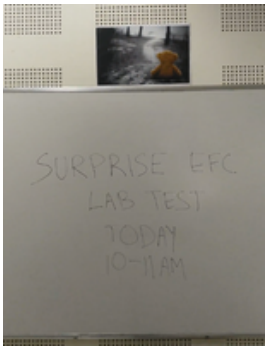


(c) The classroom

Fig. 1: Setting for the happy classroom

B. Experiment 2

The second experiment involved the induction of positive and negative mood in a different setting, namely, in one of the rooms of Radhakrishnan Hall of Residence to understand the effect of visuals on a person outside the classroom and how a person might behave in such circumstances. A happy room with a positive environment was set up using abundant lighting, bright coloured props which included balloons and decorations, motivational quotes, lively posters and a clean



(a) Posters and announcement of surprise test.

(b) Disarranged chairs and dim lighting.

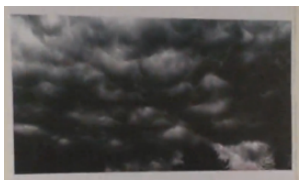
Fig. 2: Setting for the sad classroom

room (Fig. 3). The reactions of the people passing by the room were recorded so as to analyze the result of the experiment. On the other hand, the negative mood induction took place in a slightly different setting where one of the subject was shown a few sombre posters and asked to put it up as a wallpaper. Deliberate quarrels were further put up and the reactions of the subject was noted down (Fig. 4).

(a) Happy Room.

(b) Motivational Quotes.

Fig. 3: Setting for the happy room



(a)

(b)

Fig. 4: Dispiriting posters: Shown to the subject

IV. THE SURVEY

The questionnaire that was circulated is enumerated as follows:

1) What was your first reaction when you entered the room?
2) How different was your mood in class today than in other classes?
3) How different was the general mood of the students in class today than in other classes?
4) How did interaction amongst classmates change during todays class?
5) How did your surroundings affect your concentration in todays class?
6) How much do you feel visuals can affect your mood?
7) Did you feel like staying longer in class today?

We expected that the props we employed, along with the posters and quotes and the differentially coloured balloons would induce a change in mood among the subjects. With the presence of these external factors, which were definitely a change from the normal surroundings, we expected to induce a feeling of surprise and a sense of curiosity amongst the students. This we expect would result in a change of the general atmosphere of the class and also a change in the interaction amongst the classmates.

In the first laboratory, where we experimented to induce a positive mood, we expected the mood to be more alleviated as normal and interaction to be a more cheerful and enthusiastic. In the other laboratory, where we experimented to induce a negative mood, we expected the mood to be a deflated and interaction to be a little subdued and solemn.

The presence of foreign elements in a classroom are bound to grasp the attention of the fragile minds of teenage students. We expected the same in our experiment, though we did not have any preconceived notion about how the responses from the two labs should be.

We believed that the mood and general atmosphere of the set up would definitely affect the desire in the students to stay longer in the class or longing to get out as soon as possible. Pretty obviously, we expected students of first laboratory to want to stay longer and the students of the second laboratory to want to leave the classroom as soon as possible.

V. OBSERVATIONS

A. Experiment 1

1) Happy mood induction:

(a) *Observations by the team*
The overall environment of the class was happy and excited. The decorations and the entire setting made the class mood euphoric. The professor was in a jovial mood and was interacting with the students cheerfully. Students were seen playing with balloons, making smiley faces on them and enjoying the mood (Fig. 5). The teaching assistant was herself amused to see the decoration since she didn't know about the experiment beforehand and wanted a balloon for herself.

Fig. 5: Reactions of the students.

(b) *Survey analysis*

- When the students were asked about their first reaction when they entered the classroom, they reported that they were amused to see the balloons, some of them reported they were nostalgic and remembered birthday parties. They felt enthusiastic to see the

beautiful room. The coloured room gave good vibes and they felt positive, energetic and hopeful.

- When asked about their mood in the classroom that day, a lot of the students felt joyful and curious to know the cause of the decoration. Many students were more cheerful and attentive. They found themselves eager to learn things. Some students (7 out of 39), however, felt no difference in mood.
- When asked about the general mood of the class in the classroom that day, some students (10 out of 39) felt that the mood was not much different due to difficult concepts being taught to them. However, students were eager and surprised. In general, students found the environment to be exciting, lighter and much less tensed.
- When asked about the change in interaction between the students in the class that day, students reported that the interaction increased as everyone was talking about the special decoration, playing with balloons, etc. During the class, however, since it was a more theoretical than practical lecture, students found the interaction to be almost same as what it is usually.
- When asked about the effect of the environment on their concentration, 3 out of 39 students claimed that it didn't change. 4 out of 39 students claimed that their concentration decreased due to getting distracted by the surroundings. The rest felt that they were more attentive, motivated and felt good to stay in a decorated classroom.
- When asked about how happy they felt after the class, we observed the following graph with a majority of students voting for 7 to 8 out of 10 with an average of 7.23 out of 10. This number is quite good compared to the general happiness level of IIT Kharagpur students that is usually estimated to be around 6.0-6.4 according to Science of Happiness projects. (Fig. 6)

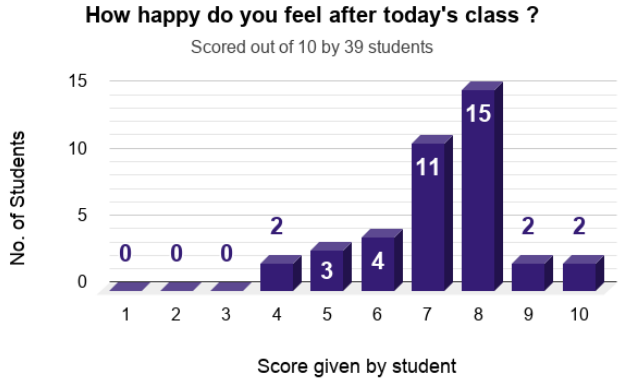


Fig. 6: Response of the students in happy classroom setup (Average = 7.23)

- When asked about how motivated they felt after the class, we observed the following graph with a peak at 7 and an average of 6.92 (Fig. 7).

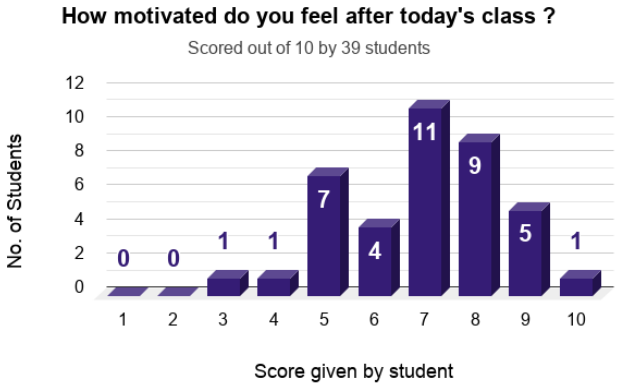


Fig. 7: Response of the students in happy classroom setup (Average = 6.92)

2) Sad mood induction:

(a) *Observations by the team*
The general mood in the lab did not seem to be as it is usually. The low lighting and dispiriting posters actually brought an unhappy environment.The teaching assistant discussed about the experiment after the lab was over and claimed that a lot of things were put well into place to create a disturbing situation. Due to general student tendency to be repelled by classes, especially the early morning ones, it was difficult to induce a sad mood into students using visuals. Sad mood induction using more interactive experiments could have led to better results. The students were curious to know about the posters and were found to be looking at them. However, not much effect was seen during the class.

(b) *Survey analysis*

- When the students were asked about their first reaction upon entering the room, they were curious about the posters. 13 out of 30 claimed that they were confused about the situation of the lab. 5 out of 30 reported that they were worried about the test. Most of them were surprised by the posters and wondered what was happening.
- When the students were asked about their mood in the class that day, 12 out of 30 reported slight or no change in their mood. 7 out of 30 were nervous due to the surprise test and were preparing for the impending test. Others reported anxious, bad mood. They were stressed, frightened and experienced a feeling of loneliness.
- When asked about the general mood of the class in the classroom that day, 8 out of 30 students reported stress, anxiety and fear due to a public speaking test in the lab. 10 students reported no change in the general mood. Others reported a less excited mood in the lab and a feeling of disgust among students.

- When asked about the change in interaction between the students in the class that day, 8 out of 30 students reported no change in the general interaction. Around 4 out of 30 students reported that they found a topic to talk about among themselves: the posters. The interaction was less due to a scheduled test for the students in the lab.
- When asked about the effect of the environment on their concentration, 7 out of 30 students reported no effect of surroundings on their concentration in class. 11 students reported that the posters were provoking and the unusual surroundings distracted them. Some students thought that the concentration increased as they could control themselves easily from looking here and there due to the posters as they didn't want to see the posters.
- When asked about how happy they felt after the class, we observed the following graph with a majority of students voting for 4 and 7 out of 10 with an average of 5.80 out of 10. This number is lower compared to the general happiness level of IIT Kharagpur students that is usually estimated to be around 6.0-6.4 according to Science of Happiness projects. (Fig. 8)

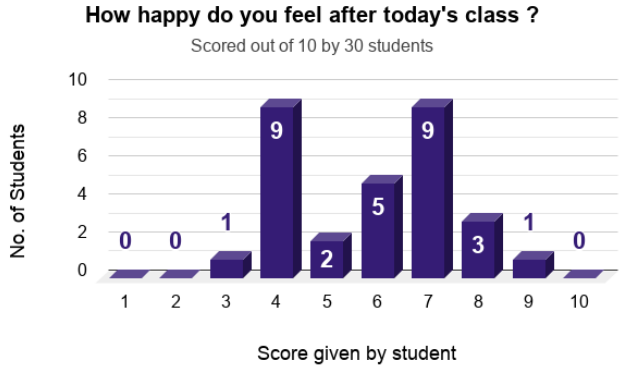


Fig. 8: Response of the students in sad classroom setup (Average = 5.80)

- When asked about how motivated they felt after the class, we observed the following graph with a peak at 6 and an average of 6.23 (Fig. 9).

3) Comparison between the two laboratories: A general comparison between the two laboratories can be given on the basis of their happiness and motivation levels based on the response from the survey. Since the number of students is different in the two laboratories, a plot with respect to percentage of students is shown. It is being clearly hinted out that the general happiness of the students in the first laboratory was on a higher side as compared to their counterpart in the second laboratory. Around 66% of students scaled 7 and 8 out of 10 in the first laboratory while for the second laboratory, a significant amount of students scaled 4 and 5 too out of 10.

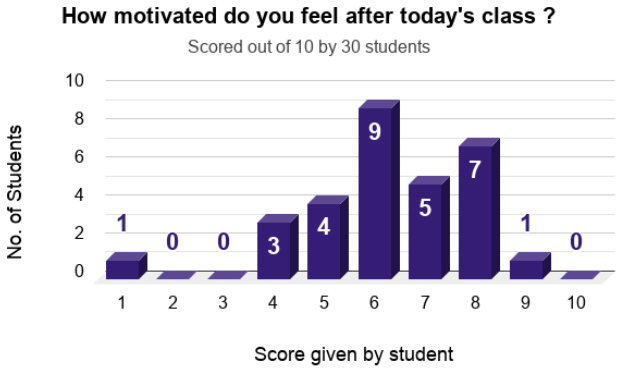


Fig. 9: Response of the students in sad classroom setup (Average = 6.23)

When the students were asked about their motivation level at the end of the class, around 50% of students voted for 7 and 8 out of 10 in the first laboratory while many students voted for 6 out of 10 in the second laboratory. These results hence shows that the students were more positive and motivated in the first laboratory than in the second laboratory (Fig. 10).

Also, comparing the averages, we can observe a greater happiness and motivation level in lab 1 than in lab 2.

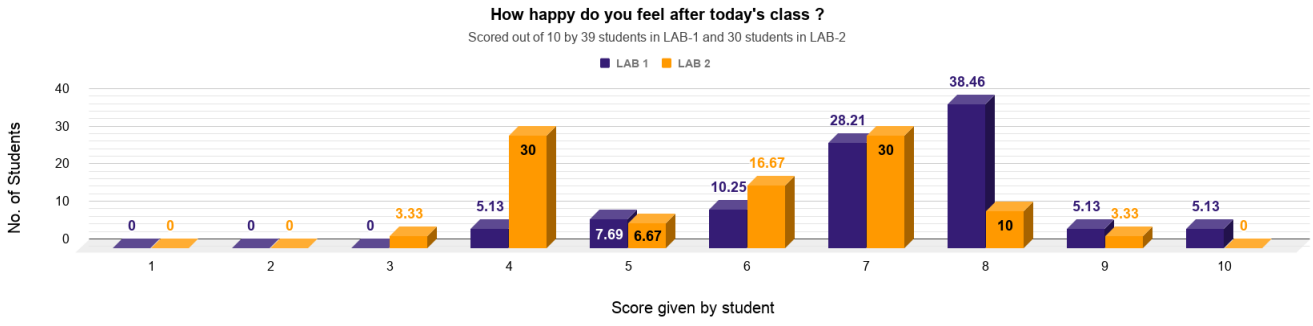
4) Other results from the survey:

(a) When the students were asked about their opinion on how much they think visuals affect their mood, we observed the following responses:
- Visuals are crucial things that can change anyone strongly.
- Visuals can be a great stress releaser as well as a stress builder.
- They help to increase concentration and make things less boring.
- Visuals can fill us with joy and greater energy.
- Visuals are highly effective and can change your mood to completely opposite.
- Visuals help to recall past experiences and enjoy memories.

(b) When the students were asked to rank visuals, text and audio based upon their relative effects on the mood of the person, we observed the following graphs. It can be clearly seen that most people ranked visuals as 1, audio as 2 and text as 3 (Fig. 11).

B. Experiment 2

1) Happy mood induction: The student belonging to the room was surprised to see the decoration. He was playing with the balloons and enjoying the environment (Fig. 12). He was amused and expressed his wonder about the effect of visuals on a person's mind. When some outsiders passed by the room, they had shocking reactions. The room caught the attention of the people and they were also compelled to come and see what was happening.



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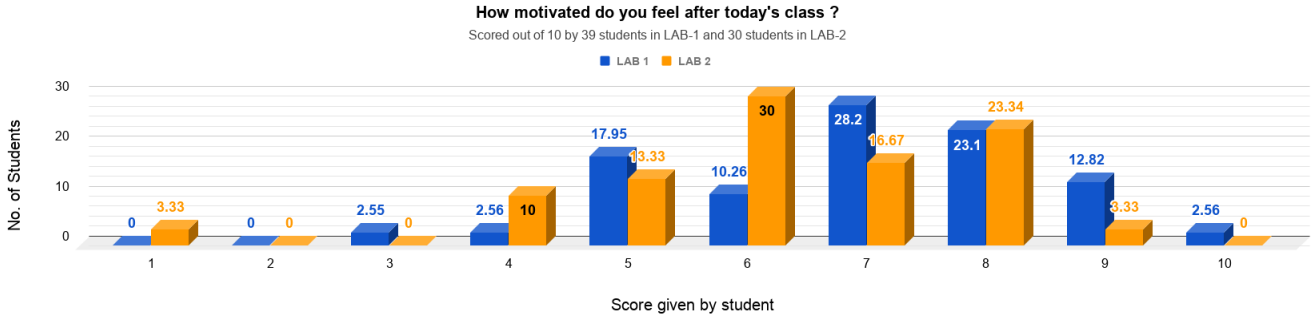
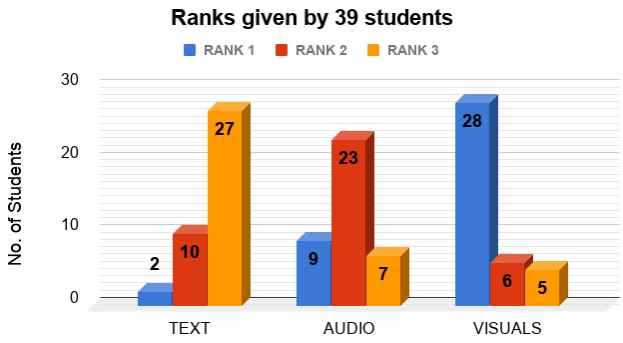
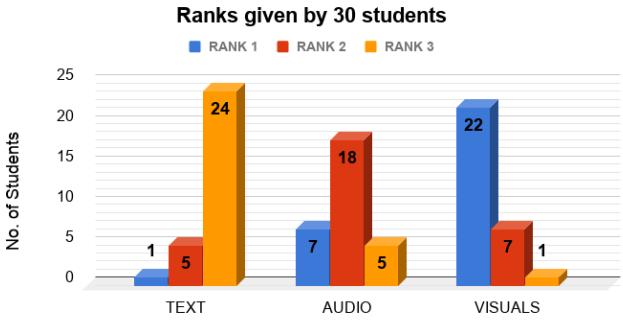


(b)

Fig. 10: Comparison of responses between the two laboratories



(a) Response in first laboratory



(b) Response in second laboratory

Fig. 11: Response for ranking of text, visual and audio

Fig. 12: Reaction of a student in happy room setup.

2) Sad mood induction: When showed the posters, the students expressed how heart-rending and gloomy the posters were and how one should never even think of pasting them in his/her room. When an argument was deliberately put up, they got a bit more angry than general.

VI. CONCLUSIONS

A. Experiment 1

Using the visual Mood Induction Procedures, we conducted the experiment to induce happy and sad mood in the

students. The following conclusions were drawn from the experiment:

- The general mood of the students was changed due to the setting. Students in the happy classroom started to play with the balloons and looked more cheerful than other classes. On the other hand, students in the sad classroom were a little anxious. This is an indication of the effect that visuals can have on the moods of the students and hence, provides an indication of what could be done to keep students happier.
- The first reactions of the students when they entered the room were filled with a mix of surprise, anxiety and curiousness. This indicates that students tend to go surprised with new things and new surroundings. As we observed students to be happier and more motivated in the happy room, we can conclude that a happy classroom with a slight tinge of dynamicity can lead to better results in student performance.
- We can infer from the data which we have collected that inducing a negative (sad) mood among the students is more difficult than inducing happy mood. The reason behind this can be the ease to induce happy mood due to the already repulsive nature of students towards studies or the difficulty to induce sad mood due to the already occurring daily evaluation that is tiresome.
- The difference between normal state and induced state was observed to be more in happy classroom than in the sad classroom. The experiment also shows that inducing happy mood was more realistic and included more manipulation with the environment. This can also lead to the conclusion that students look forward to happiness and surprises.
- The activities of the classroom also affect the mood. Just manipulating the setting may not be enough. Many of the students reported that due to the repetitive nature of the class, their mood did not change significantly. Thus, we may conclude that the professors too should take proper methods and actions to make classes interactive and fit to learn.

1) How to create a happy classroom?: Using the mood induction experiment, we propose the following implementation of the same to create a happy classroom:

- The class should be more interactive involving small fun experiments with students and elements of surprise in between.
- The students can be rewarded accordingly in order to motivate them.
- The students may be allowed to choose certain activities, giving them a sense of liberty.
- The elements of fun (also, decorative elements) should not be in excess, or else students tend to get distracted by them.
- Motivational posters often play an important role in inducing happiness among the students. There must be motivation for students to learn things.
- Not only classrooms, but if the institute takes up the initiative of keeping random happy visuals in academic complexes such that students passing by see them and can become happy, it could create a great impact on the minds of the students. If these visuals are changed everyday, it could lead to even better results due to the surprise element. For example, one day in an academic complex, a clown or a teddy randomly comes up to a person and says hello, it would definitely leave a good impact on him.

B. Experiment 2

From the second experiment, we analyzed the change in mood of the students in a hall based setup. We henceforth analyzed the effects and propose a setup for a happy hall.

- It is very important to have happy rooms in halls. Considering the kind of academic pressure on students, they must stay in a positive environment, else it may lead to negative consequences. The need of happy rooms can be concluded by the effect such visuals can have on a stressed mind and how well they can change things for people.
- The colour of the rooms in halls must be chosen appropriately. Some halls have dark colours (blue) painted on the walls of the room. However, rooms must always have light colours.
- A healthy interaction among the students also plays an important role in induction of a positive mood. Our mind controls a lot of actions and visuals affect our minds directly. Hence, visuals can affect our daily interaction. This could be concluded by the second part of the experiment when an argument took a violent turn after negative mood induction.

1) How to create a happy room/hall?:

- In a happy hall, there should be motivating posters and a good environment in the corridors.
- As concluded before, rooms must be of light colours and be well-presentable.
- There could be beautiful pieces of artwork across the corridors on the walls of the halls.
- Places in the hall where a student goes to or passes through everyday like mess, corridors, playgrounds must be maintained well.

C. General conclusions

- It is easier to induce a happy or sad mood in halls instead of classrooms because of better personal interaction within halls than within classrooms. When mood is induced in a classroom, it is over a superficial level because of the stress on students minds already and low interaction between students. In halls, the interaction increases and mood can be analyzed directly through experiments.
- As inferred from the results, visuals play a very important role in mood induction and have been generally considered as more powerful than text and audio.

D. Scope for improvement

The procedures can be fairly edited which could improve the results of induction and refine the results obtained. The colors can be chosen more carefully with better placements of props. The classes can be made more interactive for inducing positive mood. Similarly, negative mood induction can be done using gloomy and strict environment. The hall-level experiment could have been performed in a more detailed way. Our primary aim was, though, to induce mood in the classroom setup and analyze its effect on the students mind.

ACKNOWLEDGMENT

We would like to express our gratitude to Professor Priyadarshi Patnaik and Mr. Pinaki Gayen for their extreme cooperation and help during the conduction of the experiments. We would also like to thank Professor Seema Singh and Professor Jayashree Chakraborty for allowing us to conduct the experiment in their lab classes.

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