

A study of multimedia communication training strategy emphasizing imaginative representation

A thesis submitted

in partial fulfilment of the requirement for the award of Degree of

DOCTOR OF PHILOSOPHY

by

Manoj Majhi



Department of Design

Indian Institute of Technology Guwahati

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August, 2017

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August, 2017

DECLARATION

August 2017

It is certified that the work contained in this thesis titled ‘A study of multimedia communication training strategy emphasizing imaginative representation’ has been carried out by me, a doctoral student in the Department of Design, Indian Institute of Technology Guwahati under the guidance of Professor Debkumar Chakrabarti for the award of Doctor of Philosophy and that this work has not been submitted elsewhere for a degree.

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CERTIFICATE

The thesis presented herein titled 'A study of effective multimedia communication training strategy emphasizing imaginative representation', by Shri. Manoj Majhi, was undertaken under my supervision and is a bona fide work. The volume of work presented herein for the Degree of Philosophy of Indian Institute of Technology Guwahati was not submitted by him earlier for any other degree or diploma. He has fulfilled all the requirements as mentioned in the rules and regulations for submitting the thesis for the Doctor of Philosophy degree of Indian Institute of Technology Guwahati.



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ACKNOWLEDGEMENT

At the outset I wish to express sincere appreciation and indebtedness to Professor Debkumar Chakrabarti for his invaluable encouragement and guidance, along with realistic suggestions towards the preparation of this thesis. I have a lot of gratitude to my Doctoral Committee members Professor Ujjwal Kumar Saha, Professor Pradeep Gururaj Yammiyavar and Professor Amarendra Kumar Das, for their consistent diagnostic suggestions during the progress of this work.

I express my regards, to Professor Abu Taleb Khan, Professor Utpal Barua, Professor Ravi Mokashi Punekar and Dr. Sougata Karmakar along with all my faculty colleagues, staff and students in the Department of Design, Indian Institute of Technology Guwahati for their valuable suggestions, for motivating me constantly during my journey and keeping my research spirit alive. I wish to thank my parent Professor Surendra Nath Majhi and Dr. Urmila Majhi, my wife Ms. Richa Gupta, my children Aditi and Nikhil, my sister Smt. Manjushree Patro and brother-in-law Dr. Dilip Kumar Patro, my brother Shri. Sai Mohan Majhi and sister-in-law Tmd. Priyadharsini Swaminathan for their valuable cooperation and encouragements during the preparation of this thesis work.

I wish to thankfully acknowledge the help from my students and many other people who have volunteered themselves, to be subjects and have contributed with varied responses as and when I required their cooperation during this thesis work but for their generous participation and inspiration, this study would not have been possible.

Manoj Majhi

PREFACE

Various mediums of communication carry a time frame of their origin, though till date these are still valid and are being utilized. The present thesis work aims to assess the students' communications skills and practice in the evaluation of interactivity which might be effective in multimedia design. This research helped to identify the multiple interactions of communication, which could enable enhancement of students' proficiency in effectively communicating an idea using a selected medium of communication. The study demonstrates the students' skill for effective communication in utilizing interactive multimedia communication as well as gives an insight into multiple design methodologies using available mediums. The evaluation of the effectiveness of the multiple mediums, including the human factors has been discussed in this study. The study also enhances our current understanding of the effectiveness of interactive medium which is not very evident.

The study and its conclusions have been based on the analysis of the realities of three groups of students at IIT Guwahati who have been using multiple mediums as tools for design learning. A review of the quality of the assignments carried out was used to ascertain the assumptions and determine the mediums of means and methods preferred. Further, rudimentary realities to support the basis of the study has been done by effectively adopting the assumptions and assimilate the impact of the effectiveness of the interactivity of the design and design learning specifically for communication design curriculum through animation.

The thesis work was inspired by recent Indian made multimedia animation films being prevalent in the market and mostly kids get glued to view them, but parents opine these may be made in a more creative way allowing the imagination to grow rather than just only the entertainment. Thus being a teacher in this subject domain, the author wishes to look into these issues of the subject that are how creatively message can be crafted in was initiated as the scope of the current thesis work. Experimentations have been made with bachelor students of Department of Design who have undergone through a series of varied levels of exercises and projects as per the course work. The

outcome of the observations during these interactions with students has made the content of the thesis. The method of execution of this thesis work took qualitative as well as quantitative assessments of the students' works and author's understanding thereby.



ABSTRACT

The study focuses, into the multimedia application of communicating social issues with the students' perspective of effectiveness and possibility of acceptance of the experience, using aesthetic and abstract presentation versus direct real life reflection.

In the present day scenario, with technology trying to overshoot imaginative creative ideas, it is imperative for designers to check the effectiveness of the foreseen results. The evolution of communication medium has gradually led to today's interactive multimedia as being most popular. A study, on the experience of students in the evaluation of the effectiveness of aesthetics as well as the abstract use of interactive multimedia of the presentation was carried out in design, in defining guidelines under which the fine line between the virtual and the actual can be walked upon.

Interactivity in multiple mediums needs to be checked upon from time to time, to help us to understand the effectiveness of the designs that we create. Various mediums of communication carry a time frame of its origin, though till date these all are still valid and are being used. A study of this nature can enable the students in the future for visualizing the presentation framework and plan accordingly. Context specific information must have a presentation to its maximum effect to reach the desired destination with the proper message; like no-smoking campaign prevailing today has shown the fear that may be effective when a person is under the ill effect of smoking. But for starters and for the general public, specifically for affluent people who do not mind expensive treatment for cure, a different means of theme presentation is necessary.

The thesis aims at assessing such new-look of presentation. Since the students use and have experience in aesthetic abstract communication; that might be effective in multimedia design. The study has analyzed the creativity issues in assignments of 3 batches of bachelor students at IIT Guwahati with a six years span to ascertain the assumption who have been using multiple mediums as tools of design. A review of the quality of the designs carried out was used to ascertain the assumptions and determine the effective mediums of design

preferred. Further, the capability of rudimentary multimedia communications to support the basis of the study has been done effectively adapting the assumptions and assimilating the impact of the effectiveness built in the interactivity of the design.

The study was undertaken to understand the aesthetic appealing application possibilities of the communicating message that goes very deep into the mind without inserting repellent type noise (in the mind) with communication that can distort the message. Fear or direct application of real life instances erase in time whereas imaginative representative presentations are far sustainable.

The research helped to identify the multimedia interaction that effectively enhances the student's proficiency enabling him or her to communicate effectively an idea by using a selected medium of communication as well as giving an insight into the multimedia design methodologies with the help of available mediums. The evaluation of the effectiveness of the multiple mediums including varied nature of human factors has been discussed in the thesis. The study uses students' assignments as case studies that enhance our current understanding of the effectiveness of interactive medium that usually is invisible; if students are given freedom of expression without any specific constraints, they prefer aesthetically pleasing mode to present a very serious message to the mass. More practical hands-on assignments are required to be given to the students, who have specifically joined the Design program with a science background. The techniques and the skills are then automatically acquired by them.

The study, with the qualitative understanding, gives a thought that positive and aesthetic presentations may be more effective than presenting real life fear creating approaches that suggest further inquiry into context-specific applications.

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Chapter 1:

Re-looking into multimedia design and animation theme presentation

This chapter accesses the need for looking at the process of academic input for the design students' points of view to enable them to learn effective means and methods for multimedia communication through experiences. Such a process can support the theories to be experienced. And it can identify imaginative students having the ability for abstract articulation, can be innovative and could design contents by utilizing the peer group's inputs among themselves. Also, it can identify the ability and experience in individuals for interactive communication using interactive imagination. As a result, it can be an invitation to initiate studies with the participating approach for a possibility of framing design curriculums for students with a hard-core science background.

1.0 Introduction

“All, that we are, is the result of what we have thought. If a man speaks or acts with an evil thought, pain follows him. If a man speaks or acts with a pure thought, happiness follows him, like a shadow that never leaves him” the famous Buddha’s saying from Dharmapadha (Kupperman, 2012).

Since any communication is expected to create a positive effect on the focused situation, it is imperative to have the message/matter communicated through a pleasing mode and the process has to be accepted comfortably and travel a long way for yielding expected results.

Interactive communicative skill uses the reality in the experience of the time. Many of these representations today, to convey the content are multimedia based. They are a combination of various means ranging from representing through the static image to electronic. Over time many methods have risen and fallen by virtue of their individual merits and shortcomings. The evolution of communication medium has gradually led to today’s interactive multimedia in being most popular; storytelling has still maintained itself on holding the anchor line.

For humans, having utilized multiple practical designs, viz. from the time of learning to connect the visual elements of imagination, first communicating through a symbol, and then being taught about the creative use of the symbols to convey one’s ideas through the medium of speech and visuals to a listener i.e., the visual element acts as an information source and the easiness to see the acts through the visual mediums has led to successful communication design.

The communication model combined with the sound, where the visual elements being signaled to the receiver, reaches the destination eventually completing the task. In a man’s life, this path of communication takes place during the first two decades of schooling and education. But in the later part of the self, this model is influenced by a complex perception of individuals with

the many technical signals in the form of visuals, text and media resourcing from the surroundings.

It is expected that the students should acquire adequate skills of execution through practicing some set of basic skills and theories from books, and class lectures; particularly when it concerns designing a curriculum. The conventional classroom system appears inadequate to motivate the students in the directions of how to take the usage of text along with the visualization of the context and in these aspects how things function in combination of abstract representation through Animation- multimedia. The curriculum should take a modified approach. While all these interactions happen, there is a lacuna in communication.

The animation could bridge this gap in communication between various technical theories and how things actually function. But again the question of what actually happens in the process is not visible but the outcome becomes clear, i.e., the element of an interaction between the technical theory and the actual action could have made it more effective for learners to get an understanding of the theory, where a considerable role is played by the designers in making these connecting bridges between them. Specifically while imparting training to the students, it becomes more critical of how this issue can be handled as designers are going to develop such teaching-learning model fit to the content and context.

Generally a session for the introduction to design is conducted for a week prior to commencement of the subjects for the students to enable them to adapt to various mediums of design in which an overview of the different disciplines of design are given by various experts along with the emphasis of having to do the design, to learn the design methods to be done.

In the papers 'A paradigm-shift towards students-centered methodology in interaction design' (Pooviah, 1998), and 'Educational Challenges for the New Interactivity: Interval Research's University Workshop' (Mountfort, 1997) it was analyzed that how graphic design icons were to interact with each other

to bring out an abstract message to invoke interest during a short train travel in 1997 and which did give a boost to the presentation to the Samas - the conceptual prototype. The icon-driven interface to utilize travel time to cope with and interact with fellow Bombay local train commuters, without invading one another's privacy, opened up an avenue to explore effective communication by catering the design specific to the students' demographics. In today's interactive multimedia scenario, this student-centric design approach has become more feasible.

"Everything we do can be said, we do design". It may not be agreeable to all in common. But, as the design is an idea and most human beings have an idea of what they do by practically carrying out tasks. Therefore, every human being is a designer as mentioned in the book 'Introduction to Two-Dimensional Design: Understanding Form and Function' (Bowers, 2008). Designers as well as students perspective need to be considered so that a perfect bonding can happen with the topic and the presentation to be put to mass communication.

The idea can be adequately utilized to a mixed as well as a multi-featured as seen in human communication as in reality. Can there be any longing to associate the study of, say a hand gesture with literary interpretation? Is it worth attempting? The attempt here is to look into the issue "How design learners through conventional higher learning system get benefited from such a dialogue".

Having experienced in multiple areas of design for more than two decades i.e., from utilizing the large elements of communication design to address a given problem right since the 1980s to 1990s in the mediums of cartooning to other forms of design, and being able to convey the desired message to the creation of an Inventive character playing, it has been noticed that an element of creativity needs to be nurtured and this issue appears to probe into how effectively this can be executed into students' skills of presentation.

The areas of story-telling, music concerts and performing arts like dance, drama etc., uses real life players with a limited audience where artists and the audience meet face to face while the events' interaction is on. The print media have reached to the masses when the events in 2-D form give a representation of the happenings in part, with the textual medium to support such as to retrieve with the imagination of the viewer.

Mass communication, in the present time, uses a multimedia approach where theoretical, as well as real life experiences, constitute its mainframe. It is assumed that playfulness and interactive presentation with communication of interchangeable theme may be another way of presentation and possibly could also be more effective. To check out its possibility students groups were tried out with the assumption of success while dealing with multimedia communication courses of under degree program at the department of design IIT Guwahati for the Batches 2009 -2010 onwards.

In today's interactive multimedia scenario it was noticed that the student-centric approach had become more feasible. Had an interactive setup been visualized before; it could have been more effective today. This requires visualizing the theme prior to discussing with the peer groups, execution of the representation and refinement. A proper mindset to be tuned to implement the process and the methods; and a comprehensive look into is necessary. The present thesis deals with this issue following qualitative assessment on groups of Bachelor of Design students of IIT Guwahati.

1.1 Motivation for the study

A phrase “An image is worth a thousand words” (Hurkett, 2015) which has been a dictum that brings life to the medium of visual communication. It is an artifact that depicts or records visual perception of an event and context. An image is a mental picture that utilizes the direct practical experience in imaginative as well as communicative way which could appeal to viewers. Today's student has the know-how of quite a good lot of experience and techniques followed there, in the interaction of many mediums. Therefore, it is essential to undertake a careful study on the application of the techniques

which the students need and the same to be analyzed discretely keeping the effectiveness in mind. A careful study on the application of the techniques and students' needs can be analyzed towards bringing out an effective methodology in designing a curriculum.

It has been observed that when a toddler, who has just learned to walk, even utilizes an interactive multimedia design, e.g., a touch-screen mobile phone.

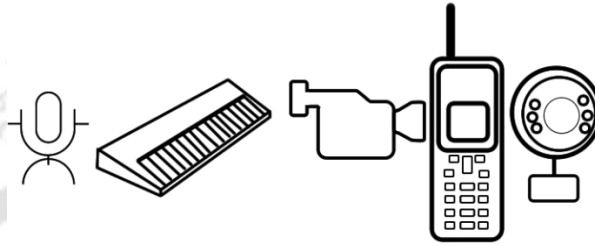


Figure 01: Communication mediums of microphone, keyboard, video, phone, webcam etc.

When the toddler walks up to the television screen and tries to interact with the event on TV (Television), mobile remote control or on-screen directly, the efforts did bring forward many questions such as should they learn things by themselves with the exploitation of the facilities provided or could a systematic training reduce the time taken to learn the same? We suddenly seem to be in a top gear in terms of interaction design technology. A gesture based control system has already made its entry, with advances in technology that helps the industry to grow.

‘Interactive multimedia’, a term quite often comes to fore while discussing an effective medium of communicating design. It is one of those activities that near about everyone can identify but just a few can explain convincingly. Communication is articulating to one another, as in the visual mediums, such as television which enables the dissemination of information, be it the method, views, etc., and the list is endless.

Various mediums of communication carry a time frame of its origin as displayed in figure 01; whereas many were in use and relinquished. Though till date, these are still valid and are still being utilized. As manifested in the cave, painting of primitive men that still carry information of the social system

of the time periods and activities. And gradually today's multimedia has emerged as most popular, while many methods have been developed and dropped out due to their individual merits and demerits. Digital era has emerged as an era of new technology. Its adequate usage depends on its use in synchronization with the theme that had been visualized.

With having experienced, multiple areas of design for more than two decades as a practitioner in the media industry i.e., from utilizing various elements of communication design to address a given problem right since the 1980s to 1990s in the mediums of cartooning to other forms of design using multimedia presentations for an international audience and as a design educator later, a need was felt to study how young generation takes various mediums to communicate a social theme. Now the questions arise: Is it that having no option of choosing, they become used whatever is given to them or do they also have some other viewpoints for representing? And how can the system of one-way communication-based broadcasting be interactive? In the 1990s a short story was enacted with computer generated environments and characters which, were broadcast in India on Sun Television under a program Namma Neeram a slap-stick comedy sequence show (Sun TV, 2013). Therein it was an inventive character playing a role. The story revolves around two characters, who gave a new definition to infotainment that imparts knowledge through information using the mediums of entertainment, the sequence is the crucial part. The story revolves around two definitions to infotainment imparts knowledge through information using the mediums of entertainments. Here the sequence of the story is the crucial part, the story is a computer generated medium which was first of its kinds in India then.

The highlight of the program is the multimedia presentation popularly known as the Masala mix. In this, the auditory medium of a song is synchronized to the video track of another. Vicky managed to let the viewers bring a smile to the face with comic antics in a way capturing the audience with post production effects of superimposition to enhance the live action sequences and simultaneously bringing in innovation in the target audience. It was developed during the same time of the MTV's (Music Television) popular Television

Program Chito Chat (Cyber, 2005) that had become popular. The audience in a way started experiencing the virtual character in a TV program.

It has been reported a virtual character as an interaction tool can play different roles depending on the application as Tong et al. 2009 mentioned in the book 'Technologies for e-learning and digital entertainment' (Jacko, 2009) this can be used in strengthening the area of design education as an initial exploration in the Indian scenario using many varied mediums to the required context. But it was not sure how much value has been transferred through this as no evaluation was carried out.

The area of story-telling by professionals that impersonate in gatherings and elderly at homes still remains the basic value system of communication. Whereas for business and political issues, the multimedia advertisements have devised many methods and are being used as mass target audience. These aspects can be said as commercial and social communications. Story-telling can be both over and underused as it depends on the storyteller's individual performance. It is essential; therefore, care should be taken to ensure well-articulated and unadulterated context-specific value-added aspect. This can be a crucial consideration for multimedia design practice. For design learners, it has been a challenge to motivate and to culminate a flow of effectiveness as well as the newness of its representation.

Drawing strength of using the human elements in design while searching for new knowledge, an appropriate methodology and procedure of know-how application needs to be followed. The information accumulated needs to be adequately categorized and analyzed to arrive at certain salient findings and equal weight is to be given to qualitative and quantitative search in the area of multimedia design.

To get an understanding, it would be good to go for a cultural study of the present design happenings in multiple contexts that can be of utility to the area of study. To study the area of Cultural Usability; which refers to a case study in animation (Usability, 2006) in which students from another community

were given an interactive communication task for understanding the national elements of flags, animals, birds, emblems, religions that were displayed to an audience of mixed age groups ranging from 16 - 60 years of age and different genders from another ethnic group from Denmark. Here it was observed that though the audience could see the elements interacting with the necessary visual effects to draw attention, the group could not understand the context until it was explained in the auditory medium of English words.

An auditory medium was used to allow the relationship of two cultures to comprehend the imaginative communicative graphical elements. Similarly, a novice student too may not be able to, comprehend the design fundamentals easily without, being introduced to a foundation to the structure of the course of design.

As communicated in the figure 02 from the communication model (Sana, 2010) that characterizes the communication as a systemic process (Boggs, 2015). An observation was made by accounting the inputs from the subject of design semantics that the communication as an interaction was first proposed by the Shannon Weaver model that was designed for decoding and encoding as activities happening simultaneously by sender and receiver while the messages are exchanged interactively and reciprocally, the main components of which include - sender, message, transmission, noise, channel, reception and receiver.

Despite a long history, this model is less useful today, given the convergence of information and communication technology and an interactive multimedia environment in which communication no longer takes place linearly. For example, it can be mentioned with reference to using a computerized bulletin board, in the process of identifying the imaginative communication, to distinguish between the sender and the receiver of the respective messages. Similarly, identifying who has to be considered to be the sender of a message when the receiver can now also acquire information on demand, with the scenario being projected as information anywhere by service providers (Anywhere, 2016).

The Shannon and Weaver model as reported in the book 'Teaching and Learning in the Health Sciences' is also inappropriate for analyzing social

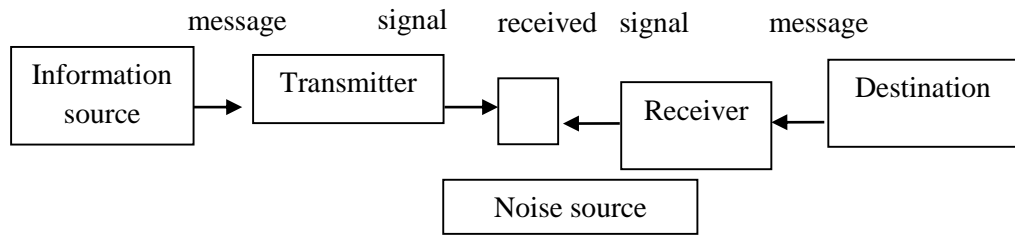


Figure 02: Communication model by Claude Elwood Shannon and Warren Weaver.

processes and policy issues. The somewhat passive notions of message sender and receiver, draw attention to the problems of effective communication.

The relationship of the effective time (T) of a message (duration) is a function of the ratio of information load (I) over message complexity (C) is incorporated as the overall organizing principles of this portion of the model, thus in figure 03, the information load (Marsh, 1983) is depicted as the numerator (i.e., $T=I/C$).

This is well communicated by an illustrated flow diagram by Marsh in his

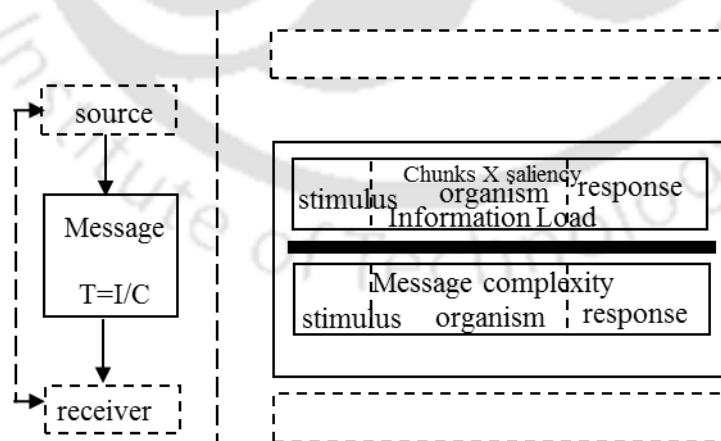


Figure 03: Marsh communication design of interaction

book 'Messages that Work: A Guide to Communication Design in 1983' in which he explains his communication in the Shannon Weaver model of Communication in figure 02. The significance of this feature stresses that the message time can be reduced significantly by reducing the complexity of the message. The option is surely a design choice influenced by the several requirements of the communication situation. To be usable either to a researcher or to a message designer, both information load, and message complexity must be quantifiable.

Communication framework labelled 'behavioural' did not explicitly account for the role of social context in communication. The frameworks were represented by Claude Shannon and Warren Weavers mathematical theory of communication in 1949 and David Berlos who expanded the Shanon Weaver model in 1960 model of sender, message, channel (medium), receiver (SMCR) model of communication, it was developed basically for the medium telephonic communication and broadcasting technology that has been utilized with relation to instructional technology (Alias, 2011).

The model was described as a linear one way process. This model replicated a communication system that involved external signal transmission and included the following parts: an information source, which produces the message; a transmitter that relays the message over a channel; a medium used to transmit the signal, and the destination (an individual or thing) for whom the message is intended.

Noise was also an important concept in the model due to its reference to interference with the intended message. If a noise is introduced, then the delivered message consists of certain distortions, certain errors, certain extraneous material that would lead one to say that the received message exhibits, due to the effects of the noise, an increased uncertainty prevails. It is the downplayed issues of the problems involved in or issues about, who gets to formulate, send and access information i.e., on the basis of the objectives and effect. It is in fact precisely these kinds of issues that may determine whatever, and the extent to which communication and information technologies serve goals.

To examine the beliefs, a group of selected students were asked to communicate their understanding on suitable mediums of communication e.g., using the mediums of photo communication, video communication or in other words multimedia communication to enhance the understanding of the basic fundamentals of design that can help in comprehending the concepts better. This attempt has given a mixed response at the beginning and at the later stage of their learning they express multimedia is preferable and on the content and context weight of various mediums may be given the space accordingly.

Design curriculum should have a balanced input of all the mediums and let students choose themselves to express/ represent the message that has been taken for communication to a specific target group.

An overview of the message component has been addressed as to examine the young students' understanding and display the understanding participatory for their own personal experiences to deliver the right fundamentals. Thus to assess the requirement conveyed by the students and to the present Indian multimedia industry status, a survey of expert views is necessary to recommend a futuristic idea of the role of multimedia in interactive communication towards learning.

This current study focuses into searching the appropriate application of innovative multimedia communication, where storytelling can be the baseline to impart the design knowledge to communication students; which is an interactive (Tavakoli, 2013) way of getting to do things effectively. This is to be encouraged in the present time frame with technology all around, however, finding an effective way for utilizing needs to be put in place.

1.2 Identification of problem

Design is a creative execution of an idea, the problem identified is unique in nature. Design experiences through areas of applied arts, architecture, communication design, engineering design, fashion design, game design, graphic design etc. The field of design includes information architecture, industrial design, instructional design, interaction design, interior design, landscape architecture, lighting design etc. and also has found prominence in

the design practice with a specific focus. The areas of military design methodology, product design, process design, and service design software design have become areas of greater importance due to its discovery of its effectiveness in today's design world.

The areas of transition design, urban design, visual design, and web design too have a major role to play in the need for imaginative representation in interactive communication designs of the present period. Thus various aspects of application specificity took different domain names.

Each of the areas has many approaches such as, the earlier mentioned KISS (Keep It Simple and Stupid / Straight) (Lodha, 2014) principle , which strives to eliminate unnecessary complications in day to day design needs , TIMTOWTDI (There Is More Than One Way To Do It) (Harris, 2009) is a philosophy to allow multiple methods of doing the same thing, UCD (Student-Centered Design) (Cajander, 2016) which focuses on the goals and tasks associated with the use of the artifact that focuses the needs, essentials , and limitations of design in terms of values used for the designed artifacts in day to day life experiences. Critical design uses designed artifact as an embodied critique or commentary on existing values, morals, and practices in a culture.

Service design is designing or organizing the experience around a product / process, as the service associated with a products use. Trans-generational design is the practice of making products and environments compatible with those physical and sensory impairments associated with human aging and which limits major activities of daily living. Speculative design process does not necessarily define a specific problem to solve; but establishes a provocative starting point from which a design process emerges.

Managing the process of exploring, defining, creating artifacts continually over time and using the prototyping possible scenarios, or solutions that incrementally/ significantly improve the inherited situation. The process too explores trend spotting to help understanding the trend process needs for having an in-depth understanding of their interactivity with the students along with the surroundings. A study is necessary which can be verifiable by experience of the generated idea in itself. In today's interactive multimedia

scenario, a participatory student centric design approach appears to be more feasible while framing a design curriculum that can motivate students to the discipline.

1.3 Exploration in multimedia

Design is an active problem-solving process that would be feasible to produce, use and re-evaluated for further development; it may be a need based development or an appropriate way out to pass on information to many people. Thus, means and methods as per context of applications vary and enjoy the scope in explorations in innovation.

The historical overview of definitions of design as a noun informally refers to a plan for the construction of an object as experimented in various fields like architectural drawings, electronic circuit diagrams and stitching patterns etc. and as the cliché Design, as a noun informally refers to a plan for the construction of an object (as found in architectural drawings, electronic circuit diagrams, and stitching patterns); while as a verb to design refers to making this device. No generally accepted definition of design exists, and the term has different connotations in different contexts and fields.

While, one can also design by directly constructing an object such as in ceramics, graphic design, and bamboo designs, as Nagas say—‘start life in a cradle of bamboo and ends in a coffin of bamboo’ (Ghosh, 2008). As found in many tribes, each having their identity and dialects, the use of multiple mediums can also be the content communication that uses a combination of different content forms.

Multimedia includes a combination of text, audio, still images, video, and interactivity content forms, which can come in handy to use to contexts that need more emphasis too (Siddiqui, 2008). Interactive visuals and crisp text can add to the liberal dash of reality-check sidebars and profiles and delightful sidetracks that not only seek to engage readers in selected technical issues but

also to draw them in closer with tales of an inspiring assortment of creative people who took the multimedia plunge and never looked back.

This freedom of choosing media and its application as abstract and real life representation, gives pleasing dynamic ambiance to the presentation satisfying both interactively communicating its usability issues. The developments in the creative process of the visual medium, as a means of multimedia application, has been articulated in the world we live is changing rapidly. And the field of imparting values to the younger generation is experiencing these changes in particular, as it applies to media services. The growth in the use of multimedia within the education sector has accelerated in recent years and looks set for continued expansion in the future. On asking, what technology wants for expanding the applications in communicating social ideas, one could argue for a broad definition of technology that can also include the arts, culture, and social institutions.

Multimedia may be intended to enhance the viewer's experience as well as for students to make it easier and faster mode to convey information, as was evident, during the laser show of Techniche 2012 (Techniche, 2012) of a laser guided graphical interaction of in an annual technical festival at the Indian Institute of Technology Guwahati (IITG). Here the visuals related to national integration reflected in the imagination of the Oscar awarded winner A. R. Rahman's (alias Dileep Kumar) (Mathai, 2009) music version of the national song 'Vandematram', which was presented to a mixed audience of IITG students, along with hundreds of other participants that also had foreigners. The whole of the audience sang along with the laser light and smoke ambiance which created a very special experience that day (Such a patriotic environment can always be created in the national sentiments of any nations' mass by using a suitable music/ design/ song involving words of a suitable song composed by suitable words). The message of the effect is that the experience is getting richer day by day in a confined screen as well as in open space.

This was done to create an effect of patriotism for the assembled audience, which did make it evident that to bring in a sense of unity in young Indians certain spark of self-esteem, through the use of the imaginative communication of the elements of sound i.e., music, to a theme as was done for national pride. The theme referred here is the Vandemataram, music, an entertainment art imbued in patriotism, to transcend everyday experience. Increased levels of interactivity among various presentation modes are made possible by combining multiple forms of media content to have an ecstatic experience.

Thus, as it can be said, multimedia applications are capable of combining people (with the interactive blend of aesthetics along with their abstraction in) with emotions. Let us look into whether the information sharing would mean that it to be unfinished or communicable intractably. How this semiotic application can be thought of, is of a concern in today's communication world, and how methodically it can be interactive so that students feel they are also part of the communication system. Can it be taught to students? If so, what would be the curriculum content? Students are reluctant to learn the basic skills alone step by step; they want to exhibit their talent straight away taking a jump to theme based design execution

As mentioned earlier the term 'multimedia' is believed to be coined by Bob Goldstein to promote the July 1966 opening of his 'Light Works at L'Oursin' (Goldman,1992) a show at Southampton, Long Island and later surfaced during a political promotional. The word has taken on different meanings, in the late 1970s, the term was used to describe presentations consisting of multi projector slide shows synchronized to an audio track. While by the 1990s Multimedia took on its current meaning; it refers to any combination of text, graphic art, sound and dynamic moving graphic art along with sound in the form of a video that is delivered by computer. When a student i.e., the viewer of the design, is given the option to control what and when these elements are to be delivered, it becomes an interactive multimedia.

When a structure of linked elements is provided through which student can find the way, interactive multimedia becomes hypermedia. The term Multimedia commonly refers to an electronic combination of media including video, still images, audio, and text in such a way that all can be accessed interactively.

Much of the content on the web today falls within this definition as understood by a large community. Some computers which were marketed in the 1990s were called Multimedia computers as they incorporated a CD-ROM, a compact disk-read-only memory drive, which allowed delivery of several hundred megabytes of video, picture, and audio data, word usage and context. This composition of CD-ROM was a better option than a floppy drive that could allow much lesser interaction. Therefore, the CD-ROM can be considered comparatively an imaginative approach towards an abstract idea that gave results when analyzed and executed.

Visual presentation can be considered as the most important medium for communication as classified by Aristotle among the traditional five human senses of sight, hearing, touch, smell, and taste (Malnar, 2004). The first sense for a majority of events is that of sight i.e. the visual medium. We know of sight as the ability of the eye to focus and detect images of visible light on the retina in each eye and determine the information. It also constitutes a sense, but it is generally regarded as a cognitive function of the visual cortex of the brain where patterns and objects in images are recognized and interpreted based on previously learned information.

Modern art includes artistic works produced during the period extending roughly from the 1860s to the 1970s and denotes the style and philosophy of the art produced during that era. The term is usually associated with art in which the traditions of the past have been thrown aside in a spirit of experimentation. Modern artists experimented with new ways of seeing and with fresh ideas about the nature of materials and functions of art.

This does allow a student to comprehend the design fundamentals but cannot realize its use in the areas, which involves immediate problem-solving. This again allows them to question the fundamentals of design, to let them try out and analyze the concepts with respect to the medium, as well as tasks that are necessary for the students to understand the concepts better. Hence, multimedia communication demands focus on the usage of visual elements.

It is necessary to use interactive multimedia, a field of visual communication to assist in imparting the concepts and ideas through a story telling medium. Storytelling is an ancient art of entertainment and education that is still valid, even the method of transmission is being experimented for better performance.

It has been reportedly used for over thousands of years to teach both history and moral values using interactive imagination as well as abstract multimedia communication to enhance the effectiveness of the content, to help explain the natural forces of the world and to worship or idolize gods and heroes.

Stories help to bring people together in common beliefs and might have been the first ways of laws and legal codes passed to people. This led to a communication theme to go for a story-telling style that emphasizes the use of the visual medium of communication. Visual communication plays a pivotal part in clarifying the interactive multimedia ideas in a manner that can be easily comprehensible with the visual mediums of drawing, art, video, virtual reality, animation etc. The medium of communication carries the time frame of its origin though till date these are valid and being used.

This was used innovatively to assist in imparting the storytelling ideas to be adapted to the present time, such as seen in the James Cameron blockbuster movie of 2015 Avatar where it lets the viewer believe that humanoids exist with the effective visualization of the scenario, techniques stitched into a simple story line to excel due to their use of different levels of interactive communication based upon the need of the story.

Indian animation has adopted technology such as been practiced in the Indian context of message delivery through representing epics to be of entertainment

as well as to impart ethical values to the viewers. The medium of communication design has traditionally been associated and anchored more in utilizing the designs at appropriate time and situation. From a visual communication perspective, examples are found in information architecture (image, text, video, etc.), the technique of editing, typography, illustration, web design, animation, multimedia advertising.

Ambient media, which are the semi-formal mediums, have in its field non-traditional or alternative mediums of communication, visual identity design, performing arts, copywriting, and professional writing skills, applied in the creative industries. For problem-solving like how to represent a theme, is a mental process consisting of finding the problem and probable solutions shaping which is a complex intellectual function, and it requires a high process of thought articulation.

This requires modulation and control of more routine or fundamental skills. Problem-solving occurs when a living thing or an artificial intelligence system needs to attain a favorable solution from a given stage needing improvement. Today's students are tomorrow's sensible designers who are to make such productions. They are our current process of training supports. How their academic assignments can be made richer through inputs, needs to be studied. Can such a quantifiable method be developed? The signs of a multimedia tool animation as a medium of communication has even been found in a 5000 year old earthen bowl discovered in Iran (Jain, 2010) in Shahr-i Sokhta, figure 04, (Animation, 2015), It has a goat in five images painted on the sides. It can be assumed that designers of that period had the knowledge to visualize its effectiveness from their experience and were able to design a product in the form of a pot by displaying the concept's effectiveness through the interactive form of the animal along with the imagination using a medium of clay in the form of a pot by displaying the concept's effectiveness through the interactive form of the animal along with the imagination using a medium of clay in the shape of an earthen vase. The designer effectively brings the dynamism in visual effect as bowl changes its position.



Figure 04: A 5,000 year old earthen bowl discovered in Shahr-i Sokhta, Iran, can be presented as an early age example of dynamism through static figure.



Figure 05: Vase displays the-technique of animation of 5 animals and 5 trees.

This has been claimed to be an example of early animation. The key frames of the communication are shown in figure 05 in which an animal resembling a Deer is shown jumping and plucking the fruits from the tree. One may learn from this case study that how innovative use of design could give rise to a medium at that ancient age which is still used to communicate effectively the concept. Since there was no equipment that existed to show the images in motion, such a series of images cannot be called animation in a true sense of Figure 04: The concept of animation through a vase – Shar-i-Sokhta earthen bowl the word, but it led to the basic foundation of dynamic visual effect.

Living beings are naturally creative in making effective communications through their gestures and movements. If given the means to design, one can adopt, as has been reported by John Heskett that, “Design is to design a design to produce a design” (Heskett, 2005). Such a dictum had also inspired many others who had designed effective communications such as a Chinese Zoetrope-type device which was invented in 180 AD by the designer Ding Huan, who strongly believed that a lamp can make effective images appear. Huan's designed device was hung over a lamp, was called ‘The Pipe Which Makes Fantasies Appear’ (Westwel, 2012).

The systematic development of animation can be traced back to Zoetrope a product design device that produces an illusion of action from a rapid succession of static pictures i.e., a series of drawings were viewed through slits in a rotating disc and a rotating drum respectively as represented in the figure 06 (Rudy, 2003). The term Zoetrope is from the Greek words ‘Zoe’ means life and ‘Tropos’ mean turn. Many others such as George Méliès took this forward. Méliès is believed to be the creator of special-effect films, for he was generally one of the first people to use animation with his technique.

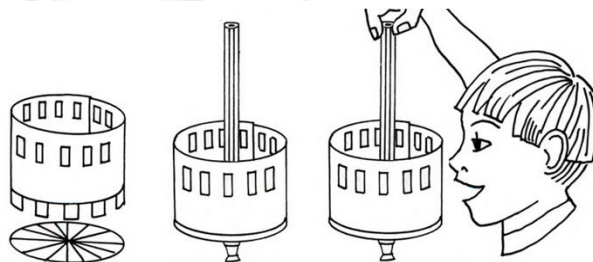


Figure 06: Zoetrope giving the concept of animation

The technique too like many inventions had been accidentally discovered when the camera seems to have fallen down while shooting and a wagon could have passed by then. When the camera was fixed back in working condition, a horse cart happened to be passing by just when Méliès restarted rolling the film. To his surprise, he found that his end result managed to make a wagon transform into a horse cart. This event was just one of the great contributions to animation in the early years.

As there was no recording equipment existed to show the images in motion, such a series of images cannot be termed animation in their true sense, though it was apparent that the communicator did try to get things to move to communicate a concept as mentioned in the case of Zoetrope. Many individuals worked simultaneously to bring out the visual medium of film animation. As there were several people working on projects which could be considered animation at about the same time, as observed in a cel-animation campaign ‘Ek Anek Aur Ekta’ (Gavankar, 2011) which was considered to be the first Indian animation film, a traditionally animated short educational film.

As mentioned earlier in this chapter, various mediums of communication carry a time frame of their origin though till date these are valid and being used.

Primitive man's cave painting carries the information of the social system of that very time and slowly today's electronic digital media has emerged as most popular. Background information and how much detail would be required in today's design curriculum; a balance is required to be maintained. Students should be equipped with such requirements to enable them to produce an effective production to a contemporary theme.

1.4 Multimedia design education

Multimedia Design education has flourished in India through (NID) National Institute of Design Ahmedabad, (India) where professional education programs in many diverse design domains i.e., in different mediums of design being imparted. The Institute is equipped with resourceful intellects unique problem-solving capabilities, creative educational culture in promoting design competencies and setting standards of design education with the openness of its educational culture and environment. The foundation program (GDPD) i.e., Graphic Design, and Product Design is spread over two semester rigorous curricula. The program is designed to assist in developing attitudes, sensorial skills and aesthetic sensitivity necessary for further specialization in specific areas of design. The purpose is to create an awareness of the design oriented environment and to arouse the students' imagination towards it.

The primary concern of the foundation program is to introduce the students to the fundamentals of design for initiating in them the culture of design as a creative problem solving process as well as to develop a highly evolved design opinion and understanding of the relationship with culture, human senses, emotions and feelings. In the foundation program, basic design courses are augmented by related studies of science and liberal arts to help and develop an understanding of the Indian space, students' needs, applications, processing of design and the amalgamation.

The foundation program is geared to inculcate the development of values, attitudes, materials and sensorial skills necessary for any design specialization. It aspires to create an awareness of the changing environment by constantly relating the students learning to real life situations. The program provides the

necessary direction, stimuli, facilities and experience to foster creativity and thereby helping each individual to discover their own identity, ability and potentiality.

The foundation program is the basis on which the remaining design curriculum is built. It also makes the student appreciate the multidisciplinary nature of design. The intake is from the students who have passed or who will appear for qualifying examinations under the higher secondary (10+2), or equivalents like AISSCE (All India Senior School Certificate Examination)/ IB (International Baccalaureate)/ ICSE (Indian Certificate of Secondary Education) etc. Design aspirants passing the Institutes admission tests / interviews are given the chance to join the field of Design, subject to passing their qualifying examinations before they join the Institute.

NID students intake follows an exclusive all India entrance test covering diverse fields background candidates. For the year 2017 this qualifying examination is UCEED (Undergraduate Common Entrance Exam for Design).(UCEED, 2016) that has become common to all B.Des programmes being offered in country.

Competence in technical and related subjects will normally be considered an advantage for learning the subject. The medium of instruction is in English. Upper age limit for candidates is 20 years i.e., the younger generation of the country. Another set of students of the post graduate degree course have been already geared up to the subject they aspired to and they are focused in learning the subject of their preference i.e., Design. Design students joining PG program come from varied backgrounds.

IDC, Industrial Design Centre, IIT Bombay, too started a master's degree programme (students with heterogeneous background covering engineering and others through a CEED, all India common entrance examination for design, from its inception followed by research (PhD) programs along with the recent inclusion of B-DES undergraduate program (students entry through UCEED).. Masters and research academic programs use multimedia spreading

over the aspects of industrial design, visual communication, interaction design, animation and mobility & vehicle design. The education program at IDC too is a unique mix of pedagogic experimentation with the conceptual design approach that blends hard-core problem solving with design research. New thoughts, philosophies and research into several aspects of design are experimented and integrated to have continuous revitalization of the masters and research academic programs at IDC.

The course structure for the design program has master's program in an industrial design which is committed to the cause of improving the quality of human environment with products that are functional and imaginative. They are systems thinkers who find creative solutions by correlating technical and ergonomic aspects with human needs. During the program, students interact with the industry and with institutions and social organizations to comprehend, learn, examine and decipher various kinds of existing problems. The students are mature and determined with what they need and they are capable of selecting the medium with the maturity from their backgrounds.

The choice and outcome of the final degree projects reflect the students' aspirations to change the Indian product scene. Masters program in visual communication design, in both institutions, has major impact on the Indian design learning that develops communications design professionals who also have a deeper understanding of interactive aspects. In addition, both the programs are designed to find solutions to communication needs and generate methodologies for solving communication problems. This emphasis is to shift from the traditional skills-driven intuitive design to creative problem solving, using appropriate media for effective communication. The course gives an opportunity to learn new skills and to advance the level of understanding. The focus is on areas of unmet demand, such as projects that have social and educational relevance.

Masters degree program in animation strives to create people with expertise who would emerge as leaders to influence the future of animation. The students are expected to direct responsibility for nearly all aspects of the film-

making process. The students have access to cutting edge IT capabilities and the proximity to other engineering disciplines which would facilitate cross-disciplinary and collaborative projects, also new areas for animation applications can be explored and experimented with. The course content includes all areas of study essential to nurture a well-rounded approach to utilize the interactive communicative learning and the understanding in the field of animation.

It appears that to have an appropriate academic program one should have teaching faculty in the fields of studies in objects and cultural notions, product semantics, cognition, mental imagery and design problem solving, bionics, creative engineering, details materials and processes, design strategy and innovation, new product development, collaborative methodology for innovation to motivate the students for learning the fundamentals. The areas of human-computer interaction (HCI) include- software engineering overlap, interaction design for Indian needs, print media, illustrations, multimedia, e-learning, storytelling in traditional & digital media, light and space, design management and design methods for effective collaboration with society needs and learning basics. Environments, product interaction design innovation, graphic language and information, visualization, way-finding and navigation systems, animation, illustration and graphic design, culture and storytelling, form and product aesthetics, creativity and product innovation, holistic thinking in design to be used in the industry today.

The input in the field of design comprises varied areas of consumer behavior and ergonomics, products for the people with special need, special effects, nature and form studies, systems thinking, traditional craft and culture typography and information design, learning systems, Indian design tradition, graphic, exhibition design, etc. Therefore the students would be able to apply their understanding their innovative communication when necessary. It becomes imperative for a student to get the understanding imparted, it becomes effective when a task is given to the student and an immediate design solution is expected in the shortest possible time. The doodles or the rough

sketches that the students make to explore many of the design courses assist in the search for the most effective designs.

There is a contrast in induction process of students in the undergraduate program at Indian Institute of Technology Guwahati among these two premier institutions. Here it is essential that students of design discipline also need to learn many others relevant courses at the same time. The question arises of its complete framing in a short time span of formal degree time period. DoD, the Department of Design, one of the thirteen departments at IIT Guwahati, that was set up in 1996 with a vision to motivate some of the brightest technical minds of the country, a passion for innovation in technology driven by a firm understanding, appreciation, and celebration of design. The department offers a B. Des Degree, (Bachelor of Design, equivalent to B. Tech) the only undergraduate level degree program of its kind to have started in an Indian Institute of Technology and followed M. Des degree and a Ph.D. degree in Design.

The focus of the program is of the invention and creative use of technologies to create effective and enjoyable experiences through interdisciplinary approach of engineering, behavioral and social sciences along with the fundamentals of design. The department envisions to produce successful graduates who would be capable of leading the changing scenarios of today and tomorrow through leadership, innovation to present newness and attractiveness along with the values to create a niche in students. Being 4-year Bachelor program, the first year is common with other engineering disciplines and only three years are available for the subjects of design disciplines. Many of them aspire for branch change after the first year. Thus, loyalty to the discipline they join and change of discipline are the cause for disturbance from the very beginning to concentrate in subjects of design.

The animation program has been structured, with learning from inabilities of graphic design, student's interface design, web design, packaging design, industrial design, fashion design, information design, interior design, sustainable design, and universal design to communicate effectively.

But students appear to be unsure when they need to apply in a presentation, the application of aesthetics to enhance its interactive communicative learning from websites and books. The abstraction through animation films available does not provide know-how that students can learn. The discussion is the only way to give confidence and inspiration to the design students at the beginning. There were several in-house meetings with faculty members as well as the peer group meetings along with invited experts from similar nature institutions and experts from reputed industries on the framing of the design curriculum that should be effective in imparting training and to make students motivated to the subject. The observations mentioned below have come to fore –

- IIT aspirant is habituated to too much Math, Chemistry, Physics (MCP) orientation, and design appears to be less important than any engineering program.
- There seems to be an inferiority complex among the students in comparison to other peer engineering students.
- Fundamentals and basic skill exercise are not using analytic MCP approach that they were looking for from the very beginning.
- Less exposure of the subject in Indian scenario leading to uncertainty among students and their parents that the design faculty always felt was an issue in educating them.
- Lower ranked students join design without having other options other than joining it to get into an IIT.
- There is a tendency to opt for a change of branch to any other branch in the undergraduate program from design; for those who could get it, feel proud leaving others in dissatisfaction.
- Consequently, the remaining students of design are dissatisfied and reluctantly continue the course.
- The scope of Animation specialization has less preference compared to other disciplines of design.

However, keeping in mind, the above observations, efforts are made to improve on the students' scenario of the Design Department, IIT, Guwahati,

resulting in good placements of students and welcome admissions for them to join for higher studies at Universities abroad. Now that the students are interested to join the course, a challenge has come to make the curriculum more inviting. Earlier it was a challenge, now too to motivate the MCP oriented students to be creative communicators, equipped with unique problem-solving capabilities, in promoting design competencies and setting standards of design education with the openness of its educational culture and environment.



Figure 07: Neytiri the daughter of the leader of the Omatiyicaya a Na'vi clan; the film utilised SFX to express imaginative communication.

Visual communication (VC) and its role in multimedia design education have flourished in NID (National Institute of Design), Ahmedabad, India and Industrial Design Centre IIT, Bombay where professional education programs in many diverse design domains i.e., in different mediums of design are being imparted.

The innovative use of VC through animation is being used to assist in imparting the storytelling in which real actors or happenings cannot be represented directly. This again is very well articulated with its straightforward use e.g. in the SFX (Special Effects) movie Avatar of 2009, a science fiction film. The exploration of the mining colony threatens the existence of a local tribe of Na'vi an imaginative interactive form of the communication of figurative visualization of 10-foot-tall blue-skinned humanoid species as shown in figure 07, Neytiri the Navi princess (Avatar, 2016) is an indigenous to Pandora who lives in harmony with nature and

worships a mother Goddess called Eywa. The film's title refers to the genetically designed or engineered Na'vi - human hybrid bodies used by a team of researchers to interact with the natives of Pandora (Mahoney, 2010).

There is also an innovative use of visual communication, through the medium of interactive communication, by using the medium of animation to assist story-telling ideas. In the Indian context, the concepts of Avatars are connected with and have parallels in Hindu mythology. Therefore, this idea does raise a question in argument format as: can multimedia communication be of importance in bridging the gap in different mediums of design? Multimedia is a medium whose content uses a mixture of several forms of media contents.

The students could visualize the effectiveness of the designs to multiple areas of communication with which the designer could visualize the interactions. Multimedia need not be associated with computers, but in the recent times, it has been found that it has developed into a medium associated with computers. A play is a medium used for a long time in which actors display actions in a script usually from literature which is written by a play-writer consisting of dialogues interacted between the actors.

The medium inspired many to come up with effective ways to send the interaction across to the viewer, thus inventing ways to put them across the ideas through the mediums of paper using text or illustrations to convey the idea, by interacting with the development of a structure or model to get the initial idea across effectively. The need for the development of the interaction was essential.

Interactive communication is usually referred to designs and its services using new-media communication in the algorithm based digitized medium which interacts with the end students through a content of textual, still graphical as well as moving graphical content using animation. Video, along with the auditory interactions, the structured playing which helps as an educational tool through games has an important role in the final design.

The study of the effectiveness of the various mediums and their interactivity with related their semantics or the meanings that they convey, the syntactic or the relation to the context of the surroundings, and realistic or the relation between the mediums and the students, has a significant role in identifying the process or the semiosis (Mavers, 2011) that helps in identifying the signs and the meanings they convey with respect to the interactivity of the effectiveness of the medium.

A student's experience is the evaluation of individual impression using the design in the form of a product, a service, an artifact, or a combination of them. This is essential to evaluate the student's experience in the multiple mediums of design to develop concrete results as students' experience is subjective, which depends on the context with time. The students' experience can be calibrated using the approach of having to evaluate the goal, the approach, and objective as well as subjective. The data quantitative and qualitative, i.e., momentary, episodically or overall students' experience, and the setup of a lab or a field.

The aspects of the students' experience, which can be measured using the procedures and techniques used to collect data. It assists in singling out the emotional assessment and an overall students' experience assessment. Interactive media is usually observed in items and processes on a new media system that communicates to the students' actions by communicating content in the textual, graphical, animated, video graphed, auditory, game kind of mediums to enable the student to comprehend the communication effectively. It needs to be arranged in a creative format such that it can be delivered in.

Design is the creation of a plan or convention for the construction of an object or a system. While an interactive multimedia is the outcome of the design as in the mediums of text i.e., print medium, as well as new-media with the web, graphical mediums of print. The new mediums, where multimedia seems to have become more interactive with, are multiple applications in the internet, hand held interactive designs, dynamic graphical content with video and animation, interactive games etc. The list seems to be increasing rapidly.

“Every human being is a designer”; this phrase, in a way terming everything we do as design, may not be agreeable to all. But design can be defined as an idea, and most living things including human beings have an idea of what they do by practically carrying out the tasks. Designers, as well as the students' perspective, needs to be considered while framing a training program so that a perfect bonding can happen with the topics to be put to mass communication.

It is assumed that playfulness and imaginative presentation with concept of commutable theme may be another way of presentation and possibly it could also be more effective. Today's students groups may be tried out with suitable assumption while dealing animation degree courses at the department of design IIT Guwahati.

1.5 Hypotheses

Effective teaching-learning dialogue is possible if imaginative communication creatively used in presentation for creating positive effect on design students in fresh and thought provoking ideas with respect to actual real life situation and can bring newness and motivation to the students.

1.6 Aim and objectives of the study

This study aims at looking into the effectiveness of multimedia design application of community issues through imaginative communication (newness and thought provoking ideas) training.

Specific objectives are set as given below:

- To understand need based basic skill on which appropriate bachelors of design animation-multimedia teaching- learning can be discussed.
- To examine the present Indian multimedia status and to discuss with students to give them an understanding of the techniques and presentations.
- To identify and demonstrate students abilities to project issues using various mediums in combination and reviewing the same to create newness.

- To recommend a training strategy of multimedia communication for bachelor degree students.

The study concentrates on students' perspective to look into effectiveness in the current trends of practice.

1.7 Methodology followed

An effective multimedia communication today has in a way made things easier to figure out, just that it requires the basic understanding of the observation. Observation is an orderly approach for collection of data. It involves the use of all of the senses to examine people in natural settings or naturally occurring situations. Observation of a field setting involves: prolonged engagement in a setting or social situation clearly expressed, self-conscious notations of how observing is done by methodical and tactical improvisation in order to develop a full understanding of the setting of interest imparting attention in ways that are in some sense standardized recording one's observations.

A few researchers in practice draw a distinction between participant observation and self-observation. This distinction is murky. An observation of the participants combined participation in the lives of the people being studied with the maintenance of a professional distance that allows adequate observation and recording of data. Participant observation underscores the person's role as the participant in the social setting he or she observes.

The range of roles one may play as a participant observer have been described along with the others. The participant observation must be learned in the field as, several skills associated with participant observation are identified. This gives rise to the query when to use this observation. There are multiple reasons for collecting observational data. Some of these reasons are:

- When is the nature of the research question to be answered?
- When is it to be focused?
- How is the answer able to satisfy the query?

- What type of question is to be asked in the query?
- When the topic is relatively unexplored and little is known to explain the behavior of people in a particular setting?
- When the detailed understanding of the meaning of a setting in all respect is valuable.
- When it is important, to study a phenomenon in its natural setting, and required for understanding.
- When the self-reported data (asking people what they do) is likely to be different from its actual behavior (what people actually do) in the field.

While implementing an intervention in a natural setting, observation may be used in conjunction with other quantitative data collection techniques. Observational data can help researchers to evaluate the fidelity of an intervention across settings and identify when stasis has been achieved. The Non-participant observation is an observation with limited interaction with the people one observes.

For example, some observational data can be collected unobtrusively (e.g. graffiti on the tables of presentation room suggest the usage pattern of the room). Researchers, who study how people communicate, often want to examine the details of how people talk and behave together.

Non-participant observation involving the use of recording devices might be a good choice. This data collection approach results in a detailed recording of the communication and provides the researcher with access to the contours of the talk (e.g., pronunciation) as well as the language of the body and behavior (e.g., gestures). It is difficult to record these aspects in detail. Non-participant observation may provide limited insight into the meaning of the social context studied. If this contextual understanding is important, participant observation might be needed.

These two data collection techniques can complement each other and be used together. The technique of observing by video or audio recording is required if people are to be observed in a closed setting, the observer is not a participant observer, and tape or video-recording is permissible, then this data recording approach may be appropriated (e.g., Client - Designer encounters). Choosing to tape-record or video-record a setting will depend, to a large extent on what is permissible in that setting.

There are a few things to be considered, decisions regarding how to record observational data depend largely on the focus of the research question and the analytic approach proposed. If the observer is trying to understand how people behave together and the people in question can see each other, then the use of video may be recommended. This is because of the important role that bodily-based behavior plays in our social processes. Without this visual information, the researcher may not fully understand what transpires (e.g. Client - Designer encounters) and in addition capturing the details of this behavior in field-notes will be difficult.

Audio-recording a telephone counseling session makes sense because the two students or interactants and the observer only have access to verbal communication. Audio and video recordings afford the researcher the opportunity to transcribe what occurs in a setting and can play it over and over. This can be very useful in the analysis process, in the present day situation, the live video calling facility too has been enabled. Field-notes participant observers may use multiple methods to gather data. One primary approach involves writing field-notes. There are several guides for learning how to prepare field-notes.

One may be interested in creating or using a template to guide researcher's observations. Templates or observational coding sheets can be useful when data is collected by inexperienced observers. Templates or observational coding sheets should only be developed after observation in the field that is not inhibited by such template theories and concepts can be driven by templates and result in focused data collection. Templates can deflect attention

from unnamed categories, unimaginable and unanticipated activities that can be very important to understand a phenomenon and a setting.

The benefits of immersion and prolonged involvement in a setting can lead to the development of foster free rapport and open speaking with members. Observation is an essential part of gaining an understanding of naturalistic settings and its member's ways of seeing. Observation can provide the foundation for theory and hypothesis development.

The students' group selected was from JEE (Joint Entrance Examination) who had qualified the aptitude test for design which serves as a prerequisite for the Bachelor degree in the Design Discipline. Storytelling by professionals and elderly at homes still remains the basic value system for communication, whereas for business and political issues advertisements (to draw attention) many methods have devised such approaches can be said as commercial and social communications. Performing arts (e.g., dance, drama etc.), use real life players with limited audience, and print media have reached to the mass.

Mass communication today uses a multimedia approach where theoretical as well as real life experiences constitute the main frame, with the students to adapting to the technologies for keeping up-to-date of the latest in the mediums of their interest based upon their adaptability of the technique. It has become a challenge, for the creator of content to also address the second layer of the communication, that can be the interaction which the students of the medium aspires to have.

The interaction is possible only, if the design approaches can address the same as was proposed in the communication design of the transporter in the television series 'Star Trek'. In which a fictional teleportation machine used in the Star Trek universe, to convert a person or object into an energy pattern, or a process called dematerialization and then beam it to a location, where it is reconverted into matter, or re-materialization. This, in the 80's, felt magical yet believable by the viewers.

The concept was made believable with the use of many multimedia techniques as reported, for having used the special effect on the transporter. It has been designed by rotating a camera in slow-motion upside down and documenting back lit shiny aluminum powder grains which were scattered between the camera and a black background to make it effective. Various mediums of communication are being utilized effectively today to convey such ideas.

Despite being centuries old, some of them are still valid as manifested in the cave paintings of primitive man that still carries information of the social system of the time periods of their origins. Over the time many methods have risen and fallen by virtue of their individual merits and shortcomings. The evolution of communication medium has gradually led to today's interactive multimedia to be most popular.

- Students learn better, from words and pictures than from words alone (present Multimedia and narration rather than narration alone).
- Spatial contiguity principle (present on-screen text near rather than far from corresponding multimedia).
- Temporal contiguity principle (present corresponding multimedia and narration simultaneously rather than successively).
- Coherence principle (exclude extraneous words, sounds, and video).
- Modality principle (present Multimedia and narration rather than multimedia and on-screen text).
- Redundancy principle (present Multimedia and narration rather than multimedia, narration, and on-screen text), and personalization principle (present words in conversational rather than formal style).
Interactive multimedia can urge a student's understanding of the paths which are consistent with the cognitive theory of multimedia learning.

IIT Guwahati is the first institute of its kind to start Bachelor of Design program in 1995, and started animation as the constituent subject of Communication design branch; and students admitted through JEE test.

The present thesis work was undertaken to analyze, and see how innovative and effective multimedia can be when implanted on the students and also

know how their inner talent can get inspiring light. For these studies, a few batches of bachelor students constituted the subjects, with the basic design theory input for demonstrating contemporary Indian as well as foreign origin multimedia (animation) clips and various levels of seminar discussion on the films and their effectiveness in communicating the message. They were asked to make their own films with own script (pre-production and post-production inputs were given). These films were put before the same students and also to the next batch of new students to have their analytic views of their productions' effectiveness.

The study was framed to have a quantitative assessment of the situation to understand an overall idea suitable to specific students of IIT Guwahati rather than specifically quantifying each and every course component details and the benefits content and benefit from its outcome (study).

The exercise was spread over a few batches of B.Des (Bachelor of Design) (Edwards, 2009) 2nd year students, all having a basic input of Design curriculum and a few among them with specializing in the field of animation along with other interests. It was found that they were very enthusiastic to create films of their own whereas other engineering-oriented students could not produce similar success in their engineering assignments.

Thereafter, the students (those who have film making exercise done from among, previous batches and new batches) were asked to make a static presentation where a theme based message can be communicated and where amateurish pragmatic presentation can shift to self-explanatory as well as long lasting wish can invite viewers own effective interpretation. These presentations have been put under feedback evaluation for effectiveness in transmitting intended message to the intended target group.

1.8 Chapter Briefs

The works herein covered are presented in five chapters.

The study focuses into the multimedia application of social issues from the point of view of the students with the students' perspective of effectiveness

and possibility of acceptance of positive and intangible presentation vs. real life direct reflection.

Chapter 1: Re-looking into multimedia design and animation theme presentation

The chapter deals with the need of multimedia instruction for technological motivated pupils of the Bachelors of Design, problem identification and exploration possibility through learning scenario that led to experiments conducted in the chapters that follow the next chapters.

Chapter 2: Status of present day usage of the multimedia and input shared with students on contemporary animation- multimedia communications.

The chapter looks into the status of present day usage of the multimedia and input shared with students on contemporary animation- multimedia communications; where it includes a Preliminary study to introduce the topic specific to IIT Guwahati students followed by planning the methodology for the interactive multimedia communication study.

The chapter presents the study plans to bring an awareness to the students representing various parts of country for necessary delivery in demonstrating a journey through various theme presentations including favourable preference for Special Effects to understand relationship between message and medium usage for effective representation.

Chapter 3: Imaginative communicative presentation of theme in search of effective communication

The chapter deals with the experiences gained by the use of various multimedia techniques to represent social themes to communicate to a specific target group as well as with universal appeal. Specifically photography as an interactive medium issue how to message depicting not to smoke: it is an era of past using the mixture of video, audio and animation to design a presentation for the society they reside in ; based upon these the students were

given choices of designing communicative presentations to create a positive effect to society in accordance to ethos.

Chapter 4: Media presentation effectiveness and further look into design newness and abstraction in presentation

The chapter comprises the interactive imagination presentation of themes in search of effectiveness in message communication, taking surveys and setting up experiments to explore the imaginative, arbitrary and conceptual nature of the designs to evaluate the media presentation effectiveness and further look into design. It focuses on effectiveness of visual culture, design visualization, usage of cartoon characters and software applications.

Chapter 5: A look into the experiences gained by the use of various multimedia techniques

The whole study looks into the effective process of teaching design students to bring awareness of various mediums available and how they interact with the them while making a presentation. The study concludes with a note that there is more than one way to do it (TMTOWTDI) to build confidence first; rudimentary tasks are given to test out the students understanding and to be self motivated. This puts forward an inquisition how to introduce the ability to solve problems effectively through.

- Displaying the understanding participatory approach for their own personal experiences to deliver the right communication in a comprehensive manner.
- Assessing the present Indian multimedia industries scenario.
- To predict a participatory role of multimedia in interactive and effective communication that can be inducted in a teaching-learning method in Animation and multimedia course at undergraduate level.

It is noticed that given freedom to choose and express ideas of their own as the necessity arises varied technical input would be good to motivate students from the very beginning of induction to the communication design.

Chapter 2:

Status of present day usage of the multimedia and input shared with students on contemporary animation- multimedia communications.

This chapter takes into account the status of present day usage of the multimedia and input shared with students on contemporary relooking into multimedia design and animation graphic communications and their aesthetic as well as abstract effect in the students' understanding of the communication of the mediums in message delivery through theme presentations. The chapter demonstrates a journey through sample examples leading to a comprehensive understanding to the techniques used.



2.0 Introduction

India has advanced in multimedia communication of commercial advertisement to infotainment of varied ideas. This has become easy with technology and relevant software development. Today's young generation is well aware of it and students' need to channelize their imagination with skill. To impart academic input of multimedia-animation to a fresh group of students of Bachelor of Design program, a program time table was drafted initially that followed learning of the software during the course time, ideas for making the communication skill effective to transmit, the imaginative communication of social messages was undertaken. It was found that the students were not motivated to learn step by step process, instead it was understood that they were found to be more interested in trying to make direct applications by using a participatory method in various events in the surroundings of IIT Guwahati.

2.1 Objectives and experiences

This chapter discusses the flow of inputs through-out four years duration program period with four batches of Bachelor of Design students and their work was exhibited to groups of students and faculty for feed-back from time to time. It aimed at understanding students' learning behavior. Students were tested with their ability in grasping the skill and explore the areas of imaginative representative imagination through class assignments while delivering the message. The assignments' outcomes were put to opinion polls i.e., a survey of opinion from a particular sample size who have visited the exhibitions as well as from their peer group when displayed to give their critical remarks on their likings.

2.1.1 Medium as tool for communication

With the changing values and awareness among the communities, the use of appropriate medium for delivering the intended message is essential. And the

students were randomly given various topics to be represented through multimedia and assigned accordingly.

In the medium of communication design, the word media (singular medium) and the word communication are derived from the Latin root *communicare*. These are the collection and transfer channels used to store and deliver information or data. It is often referred to as synonymous with mass media or news media, but may refer to a single medium used to communicate a practical experience data for any purpose. Its evolution can be seen in the beginning of human communication through artificial channels, i.e. not vocalization or gestures, goes back to ancient cave paintings, drawn maps, and writing. The use of electronic media in analog telecommunications, include traditional telephony, radio, and TV broadcasts and Digital telecommunications which allow for computer-mediated communication, telegraphy, and computer networks. Latest communication media now allow for intense long-distance exchanges between larger numbers of people (many-to-many communication via e-mail, Internet forums, and teleportation). On the other hand, many traditional broadcast media and mass media favor one-to-many communication such as television, cinema, radio, newspaper, magazines, and also social networking through Facebook, Orkut, Messenger and What's App (Chhetri, 2015) etc.

The characteristics of different mediums either single or in combination express certain imagination, and can be used as an educational tool for students as animated presentations, in which creating life i.e., bringing inanimate objects to life and to present live figures in an imaginative as well creative and expressive way in telling a story about the world that we all are a part of, which can be interesting, stimulating as well as attractive. The students will experience being absorbed in a world where time and location do not exist.

This is like being in Wonderland, and it will be beneficial to all youngsters to have this experience: the students utilize their experience of the design process of their peer groups.

2.1.2 Stages of the interactive multimedia story generation process

Storytelling is imparting events in multimedia using the mediums of words, images and sounds, etc., mostly by improvisation or embellishment. The abstraction of the experience in the imagination using interaction among various mediums to present stories and narratives that have been shared effectively in every culture as a means of entertainment, education, cultural preservation in order to instill moral values.

Crucial elements of stories and storytelling include plot, characters and narrative point of view using the stories. Youngsters have changed rapidly over the past few years. The belief is that youngsters learn best and most when they enjoy what they are doing; youngsters develop skills and competencies that can be used for effective communication. Story-telling, visual communication, cognition, emotional, ethic and arbitrary aspects, observation and sensitive aspects, concentration, problem-solving and innovative aspects used in animation provide a sense of bringing character to life.

Communication is the process of transferring information. Communication requires a sender, a message, and an intended recipient, though the receiver need not be aware of participating with the sender's intent to communicate at the time of communication. Communication can occur across large areas in time and space. Communication requires that the communicating parties share a medium to interact commonality. The communication process is complete once the receiver has understood the sender.

Shannon and Weavers model based on the communications experience of the imagination of the elements of a source of the information that produces the message, a transmitter that encodes the message into signals, a channel that adapts the signals for transmission, a receiver that decodes the message from the transmitted signal message, and a destination where the message is collected.

The argument was that there were three levels of problems for communication within this theory i.e., the clarity of the message transmitted, the technical design problem, the accuracy of the meaning conveyed i.e., the semantic

problem and its effectiveness, the behavior can be affected by the meaning received, the effectiveness problem.

2.1.3 Objectives of interactive multimedia communication tool centric study

To make students understand theory base as well the effective multimedia communications experience in utilizing the imaginative communication as practical acquaintances of some basic exercises towards skill development were done. Some selected contemporary animation films were shown to make them understand the story board and visual presentation.

Multimedia is a term frequently heard and discussed among educational technologists today. Unless clearly defined, the term can alternately mean a judicious mix of various mass media such as print, audio and video or it may mean the development of computer-based hardware and software packages produced on a mass scale and yet allow individualized use and learning. In essence, multimedia merges multiple levels of learning into an educational tool that allows for diversity in curricula presentation.

Multimedia is the exciting combination of computer hardware and software that allows you to integrate video, animation, audio, graphics, text and test these resources to develop effective presentations on an affordable desktop computer (Soni, 2004), in which the highlight of the effectiveness of technology to design for a larger student group to deliver useful content at affordable resources.

It has been described by many as being an effective mixture of the available new media hardware and software which allow the integration of images, moving images, audio, graphical content to be tested out to create effective experience of the imagination in the form of communions that can interact with available devices.

Few of us also refrain from using computers for fear of failure due to lack of proper computer application skills. Sharpening of the skills is necessary to bring forward imagination through which we have learnt to produce

excellence when peer group discuss and do assignments through a feed-back refinement of unfinished phenomenon, which we were reluctant to make the effort due to lack of those computer related skills. This could be due to many of us, especially in the field of design, are caught in this modern tug-of-war. Throughout the 1980s and 1990s, the multimedia concept took on a new meaning, as the capabilities of satellites, computers, audio and video converged to create new media with enormous potential. Together with advances in hardware and software, these technologies provide enhanced learning facility with attention to the specific needs of individual students. Today's student must acquire the computer application skills along with the imaginative aesthetic qualities and capability of appropriating in the selection of the effective mediums of communication.

A primary application of the interactive multimedia for instruction is in an instructional situation where the learner is given control so that they may review the material at their own pace in keeping with their own individual interests, needs, and cognitive processes. The fundamental objectives of interactive multimedia material are not to replace the instructor but to change the interaction concept completely. As such, multimedia must be extremely well designed and sophisticated enough to do what the best instructor does, by combining in its design the various elements of the cognitive processes and the best available technology.

2.2 Planning the methodology for the interactive multimedia communication study: Experiences

As mentioned earlier multimedia is defined by the presence of textual content, images, auditory signal, animation and video arranged to make interactive presentation. The interactivity has been a matter of discussion and interest since the 1980s. A critical ideal input is to comprehend the ability to interact and used to travel the metamorphosis between mass, interpersonal and intrapersonal (psychological), as well as the connection between old and advanced.

Today's multimedia is a careful mixture of the combination of text, graphics, audio, animation, and video elements. When a student or a viewer of a

multimedia project is allowed to control what and when and how of the elements interact that are delivered and presented, it becomes interactive multimedia.

As such multimedia can be defined as an integration of multiple media elements (audio, video, graphics, text, animation etc.) into one concurrent and uniting the whole platform that results in more benefits for the students at the end than any one of the media element can provide individually. As a teacher, letting them have a trial on a training initially that may motivate as well as make them analytical while choosing various methods to express imaginative narrations.

Experiments and exercises, instead of following a set of rules, as it is not sure if the experimental and control group taken for the whole experiment duration, will be available in this initial stage of curriculum development, a set pattern research methodology could be followed. Hence, as the main objective of this search was to understand a direction; a natural flow through varied levels of skill experiences and theme assignment might be suitable, so that a qualitative understanding may be achieved.

There were no similar programs that were available to make a comparative base for analyzing the suitability of the course matter to be followed or if a central group from students of other engineering programs would volunteer the experiments and assignments to be carried out for the purpose. Thus the whole work can be said to be information compatible with a rolling ball through an unknown path. The research is more of an understanding through handling students entrusted to develop a strategy of animation-multimedia program for JEE cleared students, so that due emphasis on specific findings can be given during the course module execution.

Three batches of B.Des students, with a six years total span, formed the main experimental group to have a qualitative understanding of the students' learning ability. This was followed by demonstrating relevant fundamentals. They were asked to do the exercises on their understanding and the use of various elements of effective multimedia communication. Their idea

presentation had been put under group discussions and the response achieved indicated that their experience has followed direct reflection of reality.

Students from all over India representation was as presented in figure 8 and 9.

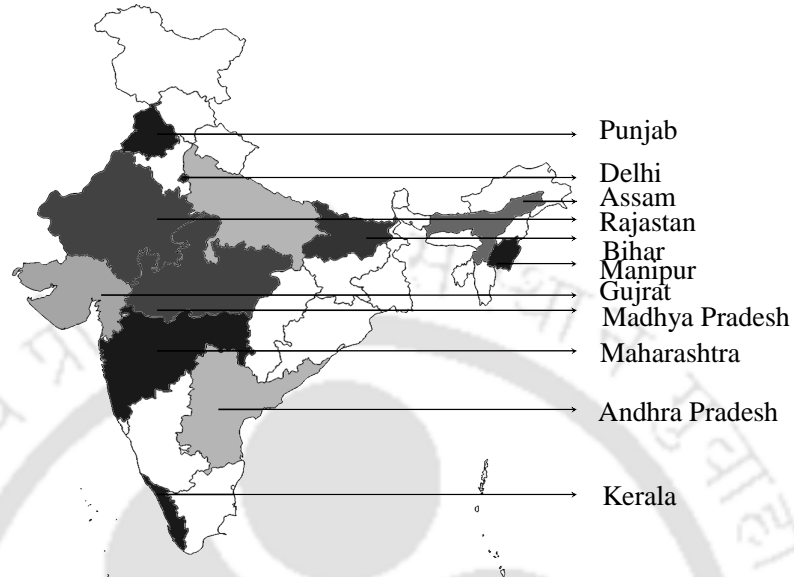


Figure 8: Diversity of focus group- students.

The background of the students were as follows 21% of them were from Andhra Pradesh (a), 15 % from Assam (b), 13 % from Madhya Pradesh (c), 13 % from Rajasthan (d), 10% from Bihar (e), 10% from Uttar Pradesh (f), and 3% were from Gujarat (g), Kerala (h), Maharashtra (i), Manipur (j), Punjab (k), Delhi (l) as represented in a bar diagram in figure 10 constituted the initial batch to start the experiment.

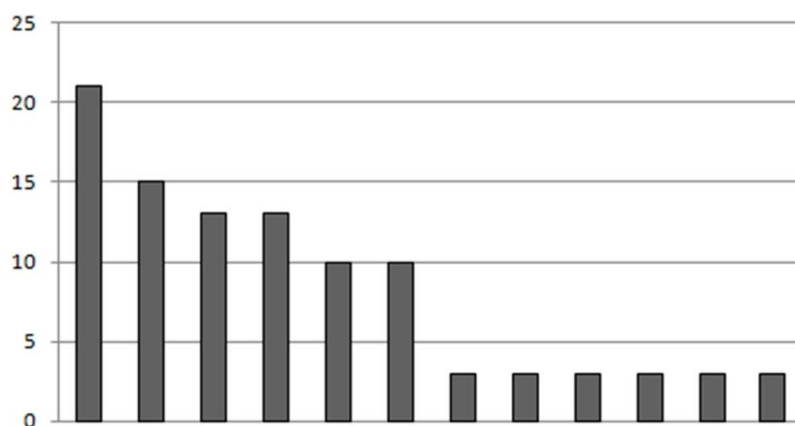


Figure 9: Constitution of the initial batch to start with the experiment.

When all students were initially asked to express their likingness of mediums, a common preference appeared as presented in figure 10. The students were taken through a course of training programme and the experience gathered thereby constituted the present thesis material. Many-a-times it has taken a path of experiments with students from time to time that may differ from conventional research methodology followed for a PhD thesis. This has come up as a compilation of experiences gathered followed by qualitative observation and drawing inferences there by.

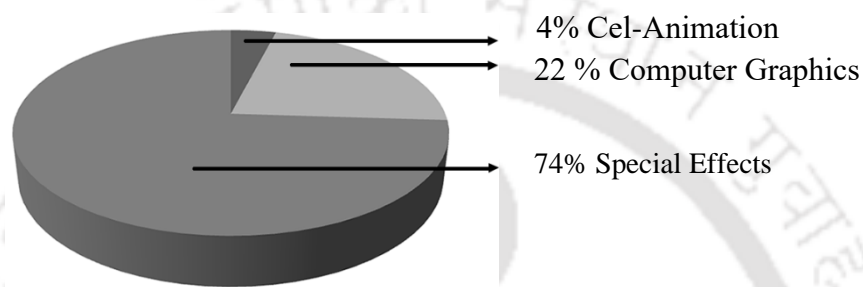


Figure 10: Preference for mediums of communication for the focus group.

2.3 Preliminary introduction to the topic

Such diverse student groups helped to give a comprehensive understanding of what could be done to plan for a course curriculum. They had been asked to document the technical festival Technice 2012, where a laser show was presented to the participants of the event. An imaginative communications to make it easier and quicker to convey the information. It was a display of a laser guided graphical experience, where the students learnt from the experience of the medium of visuals related to National Integration to the music of the Song 'Vandemataram'.

They were asked to document the technical festival Technice 2012 that was held at IIT Guwahati, where a laser show as shown in Figure 11 was presented to the participants of the event. It was a laser guided graphical interactive experience through which the students learn an imaginative communication means of making an easier demonstration and quicker to convey the information and the experience of the medium of visuals related to the

National integration to the auditory medium of the song ‘Vandemataram’. The audience sang along with the laser lights display and the smoke filled ambience that was used to create an effect for the assembled audience, making evident to bring a sense of unity in the young students assembled. The students had rated this experience as a certain spark of self-esteem.

The medium of performing arts e.g., dance, drama etc., uses real life players with limited audience, and print media have reached to the mass. Mass



Figure 11: High intensity Laser lights show presented to the students to give the feeling of patriotism: an experience of a new medium.

communication today uses a multimedia approach where conceptual as well as real life experiences constitute the main frame as expressed by students .

The medium of communication design has traditionally been associated and anchored more in utilizing the designs at appropriate time and situation. Search for to develop a theory in design of its own has been observed as a recent phenomenon. In fact it draws theoretical frameworks from a wide variety of the area of communication design. From a visual communication perspective, examples are found in domains of information architecture editing, typography, illustration, web design, animation, advertising, ambient media, visual identity design, performing arts, copywriting and professional writing skills applied in the creative industries. At the very beginning this experience was presented as a glimpse of an emotion, and complex mixture of mediums to express an imaginary abstraction of an emotion, and how it is essential to nurture a well-rounded approach to learning and understanding in

the field of animation and to keep pace with the expanding frontiers as displayed in figure 11.

The IIT Guwahati students have been selected for such enquiry as they represent from all over country, so a preliminary national flavor to the findings could be achieved. The assignments given to them were to study the invention, and creative use that was basically to express enjoyable experiences as well as an effective way to reach the intended audience. Its relevance is the semiotics (Edmundson, 2010) in today's design has Multimedia. New media holds out a possibility of on-demand access to content anytime, anywhere, on any digital device. The phrase taken by a media company to promote them recently seems to give a feel of it. It is a creative participation and community formation around the media content with elements of a source of the information that produces the message. It acts as a transmitter that encodes the message into signals and a channel as well as that adapts the signals for transmission. It is also a receiver that decodes the message from the transmitted signal message, and a destination centre where the message is collected.

Step by step details on the show construction was discussed with the students; while discussing the process, fundamentals were imparted on them that could motivate them to take interest on the fundamental skill. This led to object oriented exercises.

2.4. Object representative exercise

The study of various mediums and their interactivity of their semantic or significance to the meanings that they convey, the syntactic and the acceptance of the relation to the context and to their surroundings, and their application was carried out with the same group of students.

It was essential to analyze their experience of imaginative interaction towards a meaningful application of the basic design elements through a task to sketch and shade. A relatively known object was given to the students, e.g., a steel kettle and a buffed metal paper shredder were shown and removed. Then they were asked to draw with their best possible way to bring out the detail of any

one of them emphasizing on giving their interpreted communication from their choice on an A3 paper. The students were given an hour to do the task. The graphical representation of students intake, figure 8-9, their preference of rendering and applications, figure 10 and 12-14, on initial level exercises are shown in figure 15-17.

It was observed that 60% of them used the steel kettle to communicate while 40 % of them used the paper shredder, graphically represented in figure 12. On enquiry it was established that the material of the objects that was the

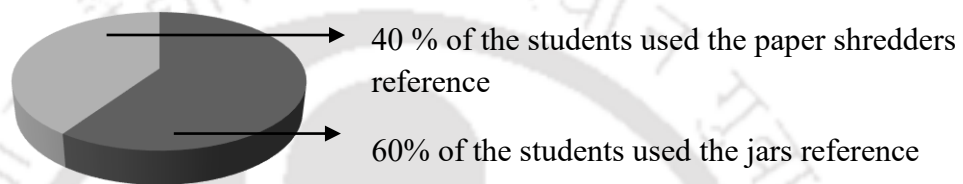


Figure 12: Preference for hand sketch between the give objects of a paper shredder and an electric kettle.

reason for the steel jar having been chosen by a majority of the students, as the jars details could be easily identified based upon the lighter shade or might be an aesthetic value while the paper shredder was not as easily visible, or abstract as compared to the jar.

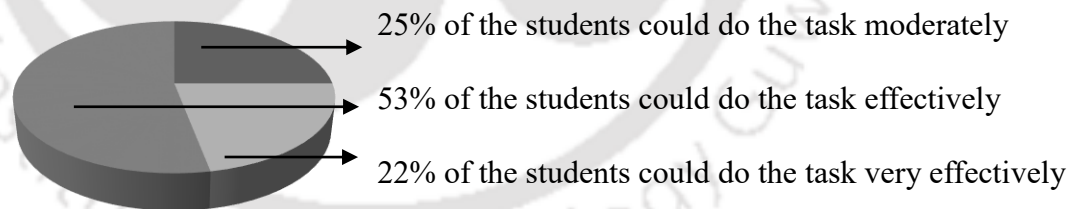


Figure 13: Representation of the visualized data to create 3D on a 2D surface

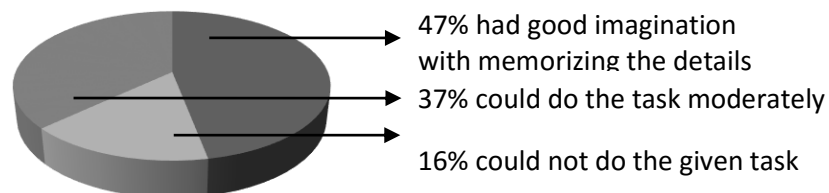


Figure 14: Representation of the visualization of the task to sketch the 3D objects in 2D form effectively .

It was observed that in the case of the jar, more than half of them had an average imagination in representing their visualization effectively shown in figure 13, around a quarter of them had very good visualization, the aesthetic value of the task while a quarter of them could not do the task appropriately, as less than half of the them had a very good memorization and imagination as they could observe and memorize the imaginative interaction of the figure and were used to represent using the medium of hand sketching using paper and pencil effectively as represented in figure 15.

The experience of this communication is in using its instructive nature. While in the case of the paper shredder, it was observed that quite a few of them who could do the task had an average imagination, can be an abstraction in doing the task. While a few of them could not do it appropriately, again bringing forward the need of experience to do the task as represented in figure 14.

On enquiring about their choices of objects for their aesthetic and abstract natures, the students seemed to have preferred the steel kettle, as there was more visual elements of the physical structure to visualize; more easier to memorize and easier to be represented imaginatively. Whereas there were lesser physical features required for detailed observation to enhance the communication to be used by the students while using the paper shredder as represented in figure 17.

The exercise was conducted to know how they were capable of visualizing through drawing on a sheet choosing from graphite pencils of variations of 9H, 8H, 7H, 6H, 5H, 4H, 3H, 2H, H, F, HB, B, 2B, 3B, 4B, 5B, 6B, 7B, 8B and 9B and it was noticed that students used only HB, 3B, and 6B for the task.

This could probably be due to the lack of the experience in using the medium of shading using pencil and hand skills to execute the representation details. This enabled the students, to explore the freedom in using the medium, i.e., in choosing the pencil quality, prior to the task of drawing to be taken into consideration.

The observation revealed that students have a good observation and imagination capability at the very beginning but there seemed to be a lack of experience in the hand rendering and as the final representation was not up to the expected standards, there was a tendency (as expressed by the students) to use computer graphic software that gives an easier representation but the imaginative abstraction might be improved upon.

Experience teaches opine, to cultivate imaginative abstractness, hand rendering skill is necessary and the challenge is how to motivate them.

Instead of giving pencil line drawing at the beginning to develop a skill that JEE students did not seem to prefer due to their peer group of other disciplines of the science and engineering programs practice formulas where engineering students were directly put to self understanding of the discipline. Given below are the inputs shared with students along with mini assignments to allow them to acquire the skills.

After this exercise, students were shown the use of variations of pencils and rendering skill demonstration to get them to feel that the exercise is necessary to learn, thus motivating them. Given below are the inputs shared with the students along with the mini assignments to equate them with. It was observed that more than half of them, 64%, used the steel kettle to communicate while less than half of them, 36%, used the paper shredder, graphically represented in figure 12. The outcome is presented in figure.13 and figure 14, and thereafter demonstrating illustration technique they came up with refined presentation as shown in Fig15, 16, and 17. On enquiry, it was established that the material of the objects that might have been the reason for the steel jar having been chosen by the majority of students, as the jars details could be easily identified based upon the lighter display of the objects.

This probably could be due to the inexperience in using the medium of shading using pencil and hand skill to execute the representation details. This enabled students to explore freedom in using the medium. i.e., choosing the pencil quality, prior to the task of drawing, is to be taken into consideration.

The observations revealed that students have good observation and imagination capability at the very beginning but there seemed to be a lack of experience in hand rendering. As the final expression was not so impressive there was a tendency (expressed by students) to use computer graphics software that gives easy representation, but imaginative output might not be impressive. Software is an abstract tool that follows the originality in imagination. For a representation of an idea, hand rendering and illustrative out line may lead to the appropriate use of the software skill. While putting this to other teachers of the department, they collectively opined that to cultivate imaginative abstractness, hand drawing and rendering skill is necessary and the challenge is how to motivate them.

From the students' point of view by learning a technique of communication such as hand rendering, gave them motivation to think differently, as one of them used the technique to frame a stop-motion film of a hand rendering.

A few case studies (encircled in Red) as shown in Figure 15 were randomly chosen to communicate their imaginative representation from the hand rendered examples.



Figure 15: Comprehensive view of the hand renders of paper shredder and kettle.

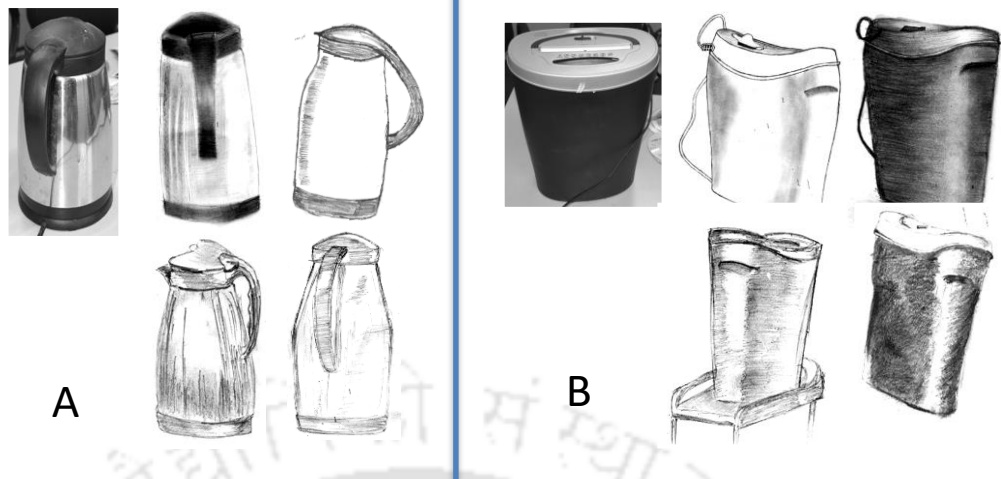


Figure 16: A closer view of how the hand rendered (A) kettles and (B) paper shredders were selected from the ones sketched by the students used to demonstrate the rendering technique further.

	Kettle		Shredder	
		60%		40%
	Visual Representation			
	Moderately	Effectively	Very Effectively	
	09	18	07	
	25%	53%	22%	
	Visual Representation using the medium of hand rendering			
	Moderate imagination	Good imagination	Below par imagination	
	13	16	05	
	37%	47%	16%	

Figure 17: Hand render to a given context

2.5 Experiment using 3D cubism on 2D surface

Character representation and depiction of the aesthetic usage in color applications to express the themes were taken as an abstraction exercise. Given below are the results of these exercises.

The objective of the study was to allow the students experience of interactive imagination to represent characters without a specific frame and with the peer groups' inputs by taking their feedbacks to refine and innovatively modify their designs. Cubism was a style of art node that modernism brought across the 20th century; its variety had surprised all. The exercise was to make them conversant to free imagination of how design elements are used to express meanings, to appreciate color through the movement of cubism that is in signs visible around us. The task was to design a composition using varied colors to address a composition based on a theme of 'Between the Lines' using an outline motif drawn on the wall of the Department of Design IIT Guwahati, figure 18.

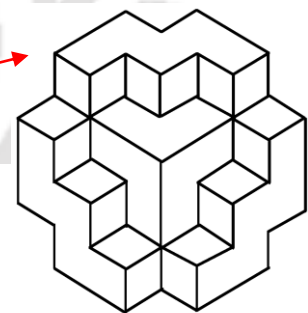
The objective was to understand the use of an important element of design, namely color in a semiotic system. Semiotics is the study of abstraction of signs and the aesthetics of the sign processes, it is often divided into three branches namely-

- (i) Semantics that deals with the relation between signs and the things to which they refer to mean
- (ii) Syntactic addresses the relations among signs in formal structures.
- (iii) Pragmatics that relates between signs and its effects on they have on the people who use them to create a plan for an object or a system referred to as design. Cubism with its versatility was the key design tool prevalent across the 20th century.

In order to analyze the student's understanding of interaction and appreciation of color through the movement of Cubism, an exercise was undertaken in Dept. of Design, IIT Guwahati-

The first task was assigned to use the principles of visual perception and design a composition using image analysis of the elements of design namely color which can be used aesthetically as well as interactively to address the given theme to the context of the world they live in i.e., IIT Guwahati, in the given frame of the motif. Prior to assigning the tasks to the students, the principles of color perception with their aesthetic references were discussed with them. A few examples have been shared –

A task to use colors and bring out an abstract composition for a context of between the lines of their surroundings to bring out the essence of the abstract interaction from the students to the context of 'Between the Lines', a tessellation which is a repetition of a pattern, to form small squares or blocks, such as tiles on pavements that are arranged in a checkered or mosaic pattern as in figure 18 is an illustration demonstrating tessellation. The three simple shapes show the slide, reflection (flip), and rotation (turn) techniques. And to explain it for better understanding of the students is to start with the middle tile.



Motif on
department of
design wall

Figure 18: Motif on the wall of the Department of Design IIT Guwahati present until early 2016, used for the exercise given to the students.

The slide technique is utilized to redraw the middle tile to the tile above it. From the top, the tile is reproduced clockwise using the reflect, slide, reflect and rotate techniques consecutively. To analyze semiotics for a student group, the students were given less than 25 minutes to complete a task of designing a composition of the elements of design namely color to address the theme of Between the Lines to the context of their campus.

Before assigning the task to the students, the principles of the color perception with psychological references was discussed with them, Imagination and thought provoking ideas with respect to the figure 21. The designer Yeshwant Choudhary (Choudhary, 1997) concept of the IIT Guwahati logo, figure 19 IIT Guwahati logo, the Prussian Blue color to symbolize the mind used for perceptivity and research, Indian Red for the heart that has creativity and development, White to symbolize the body for qualitative productivity and Yellow Ochre for Purusha to symbolize generative technology from the Yogic centers of the human body.



Figure 19: Logo of IIT Guwahati.

The study brought forward the hypothesis of being valid from rudimentary experiment of using the color theory. This is to emphasize the effectiveness of the interactivity to augment the learning of the medium and to use its effectiveness in other mediums i.e., The experience of the task of using interactivity as a tool to make the learning effective, learning by doing (Jin, 2012) which was the realism in its experience, interactive communication in the imagination, interactively designed by the students by using more than one medium of communication so as to make it effective.

From the given task to use colors and bring out a composition for between the lines to the context of their surroundings to bring out the essence of the

interaction from the students from a topic of ‘a planet of our own - a vision of sustainability’ from Universities across six continents for sustainability, a tessellation which is a repetition of a pattern, to form of small squares or blocks, such as tiles on pavements that are arranged in a checkered or mosaic pattern as in figure 18 is an illustration demonstrating tessellation. The three simple shapes show the slide, reflection (flip), and rotation (turn) techniques. And to explain it for better understanding the students had to start with the middle tile.

The slide technique is utilized to redraw the middle tile to the tile above it. From the top, the tile is reproduced clockwise using the reflect, slide, reflect and rotate techniques consecutively. To analyze semiotics for a student group, the students were given less than 25 minutes to complete a task of designing a composition of the elements of design namely colors to address the theme of Between the Lines to the context of our campus.

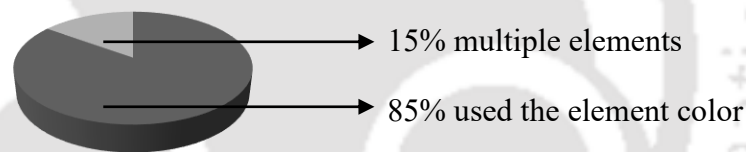


Figure 20: The use of the elements of design for the task

Compositions experience, with interactive communicative compositions were put under the feedback from the peer group indicated that the subjects used various elements of semiotics in their design to convey the central idea of linking this understanding to the color value. An analysis of the data contained in the composition showed 85% of the subjects used the element of color and 15% (as displayed in figure 20) of the subjects used multiple elements such as emphasis to color, shape, texture, space, form etc. of graphic designs to communicate their concepts.

Cubism is a style of painting and sculpture developed in, reduction of effective multimedia communication experience of the natural forms to their geometrical equivalents. It was encouraging to note the vigor and self-realization in imagination, arbitration, conceptual semiotic design that the

exercise brought out from subjects and enabled them to communicate their ideas in unique and effective manner.

From among the thirty four students who were given compositions, a few of the selected compositions are presented in this section.

As mentioned earlier the color signifies intellect or freshness, the energy and strength, the purity, along with the motto of IITG being knowledge is power and the life at IITG being joyful and knowledge imparted being pure as represented in figure 21, the colors incorporate within itself the mottos and

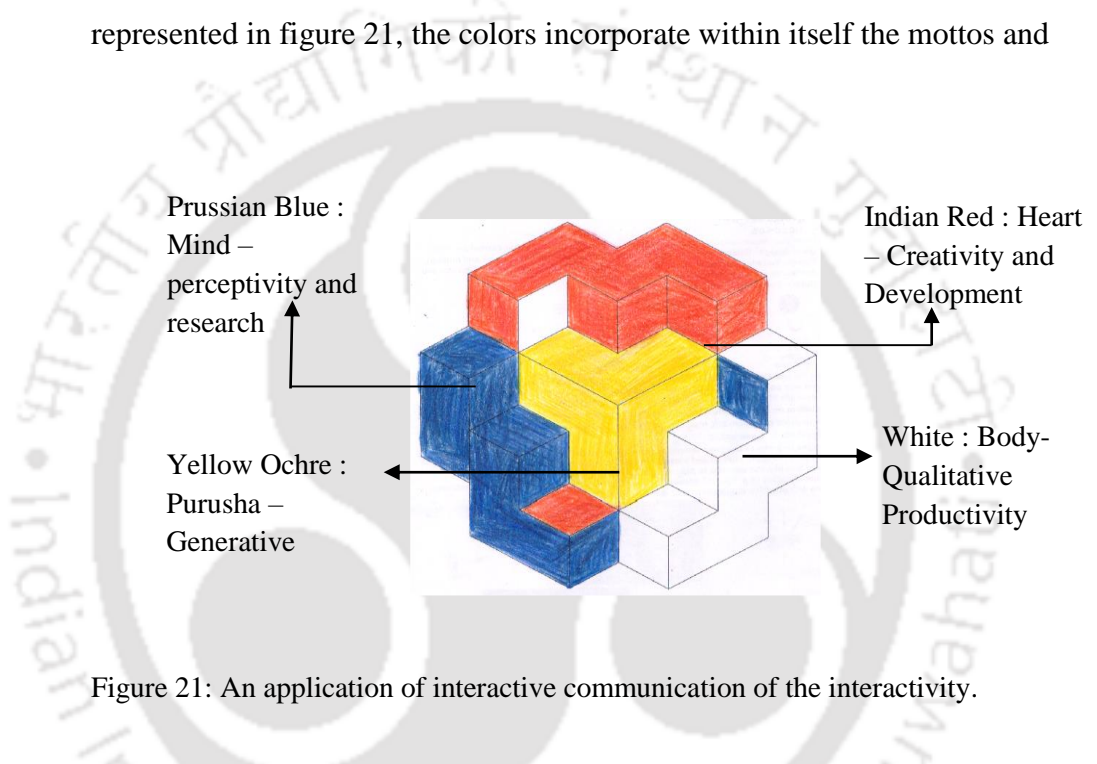


Figure 21: An application of interactive communication of the interactivity.

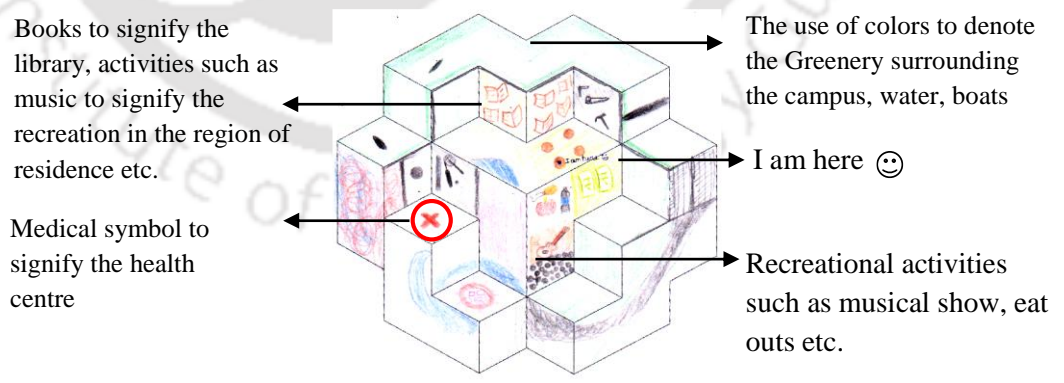


Figure 22: A composition showing the perception of the student for between the lines.

ideas in context with IITG. Symbol of the mind used for perceptivity and research, Indian Red for the heart that has creativity and development, White to symbolize the body for qualitative productivity and Yellow Ochre for Purusha to symbolize generative technology from the Yogic centers of the human body.

In the composition figure 22 the signs that hinted in the creation of a positive effect activities in the surroundings were the arbitration of the Greenery that is abundant in the area.

Various activities in which an individual indulges as the 2nd task was given to represent various activities in campus life and its salient elements that feel prominent symbolically on the same motif's composition can be represented by symbols as the students felt graphical symbols communicate more effectively than words do, the use of tools in indicating a workshop that uses a wood -saw, a hack-saw and a mallet; the rupee symbol a communication to denote banks; sports icon of games to communicate a stadium; use of a Tandoori chicken leg to symbolize non-vegetarian food; a musical instrument to designate musical performances for the communities; the audience represented by black dots for the performance communicates likeness to the taste of the audience; this is in combination conveys an analogy of symbolism; the student has tried to personalize the imagination too with 'I am here :D' (Benenson, 2015) an emoji used to communicate the aesthetic abstraction in the message in figure 22.

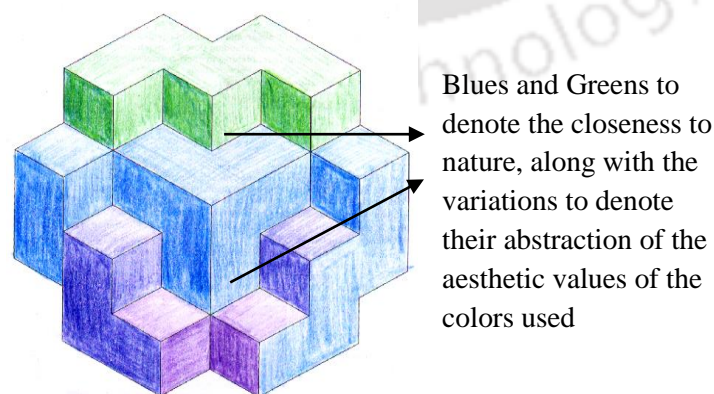


Figure 23: A composition showing the perception of the student for between the lines with shades of Blue and Green

When the students were asked to express their inputs in the given motif composition, the following compositions given below were a few of the abstract responses. In the composition their conceptual definition of the life at IITG by using a color scheme in the 3 dimensional grid using the cool color scheme in figure 23 the student had used shades of Blue and Green that depicts that life here is cool, they have made a metaphorical representation of their life at campus. Another reason for having used the cool color scheme is that it is soothing to the eye, to metaphorically showing the life here is also an abstraction of soothing to the inner eye, the imaginative mind. The lower levels are Greener and the higher levels are Bluer, by this they seem to have trying to show here that life here is easy and Greener at the lower levels, it gets difficult and Bluer as we rise to the higher levels, also gets cooler here at IITG, as we are close to nature, the colors we see the most seemed to be Blue and Green.

With their free hand exercises, the students have to overcome their mental block and come up with open imaginative representation of what they visualize as well as see in reality; they go one step forward to analyze the actual content and reconstruct with abstraction. Depending upon their understanding here they have experienced to different solid color to demarcate the various levels of life we face in the campus that i.e., development and growth along with the systematic changes at every level through every step of the composition.

The color and symbol interaction have used gradient and given the visualized shadows through a color gradation in order to show a light that has been shown abstractly aesthetically falling on the given motif. This is recognized as the continuous light of knowledge that enlightens the life. The colors had been changed at every step of the composition, using the experiences in different solid color to demarcate the various levels of life they face at campus, i.e., development, growth and change at every level. The interaction had used gradient and given the visualized shadows through gradient in order to show a light that falls on this grid. This is recognized as the continuous light of knowledge that falls upon it.

In composition represented in figure 24 below, has used the predominant colors of Pink, Blue, Red & White, as the lines give an interaction of the 3D structure imagination protruding out, it had been decided to interact with the imaginative communication close to nature, the colors we see the most and around us are Blue and Green and that could have been the reason for them to have used the shades of Blue and Green and made an abstraction of light and colorful hues in left facing areas are depicted as shadows.

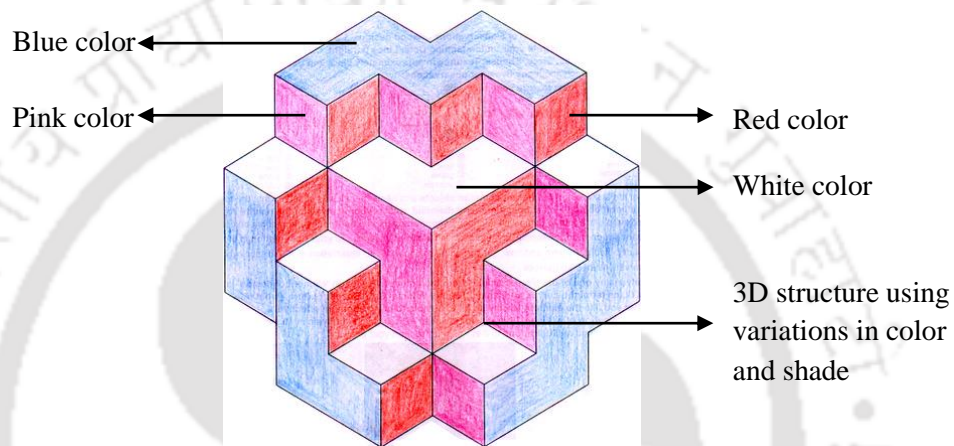


Figure 24: Imagination used to communicate an idea through design element of color.

There has been use of White color at the top facing areas, Red color at right facing areas and Pink color at left facing areas. In the composition the exception was the outline where they used the color Blue, they reasons that though the image looked like a 3D structure, still it was made on the 2D surface that prompted them to maintain some 2D flavor too.

White color was used to signify the present of strong light source overhead the structure. Red and White color signify cumulating of both shadow and weak reflected light coming from objects which can be imagined surrounding them at a significant distance as they are not visible in the image. Since they are used on surfaces which are making an approximate right angles so definitely there would be different combination of light striking them and hence the Red and Pink, which are different colors.

The back ground color, they had used a variation in tone to give the mainframe spotlight. They felt the need to have used shadows outside the frame too but refrained from doing so as the objective was restricted between the lines. The overall color combination also seemed to show a sense of harmony as they are quite contrasting but still managed to fit in the frame quite well enhancing the aesthetic quality as well.

Figure 25 indicates that the design circle is progressively growing, which symbolizes the increasing number of designers graduating from the Department of Design, IIT-G that has been in existence over a period of years. Road symbol with vehicle indicates good transport. Laptops and cell phones indicate good communication system. Architectural designs indicates buildings , along with the, Greenery.

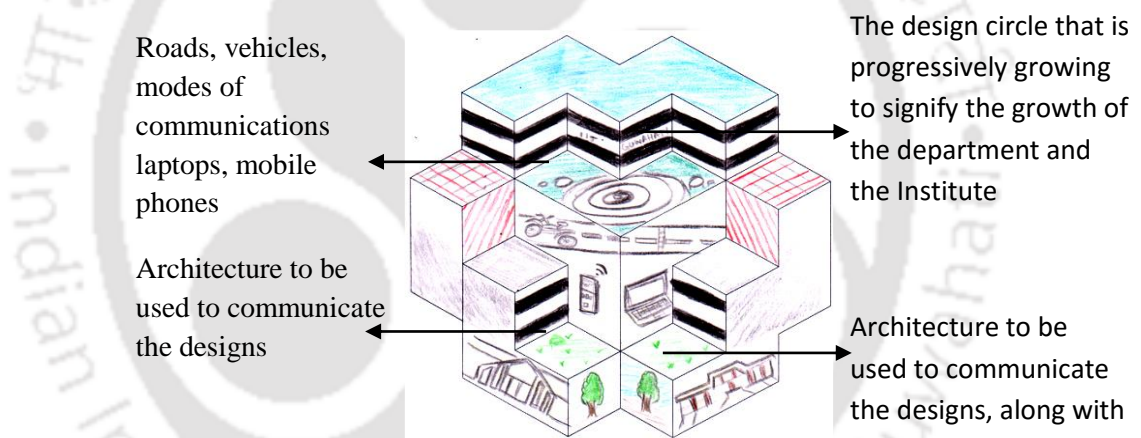


Figure 25: Communication of an idea through graphical elements

The compositions in figures 25 and 26 was demonstrated to the peer group for their feed-back that every one of them was creative awaiting a chance to utilize their sense of creativity in the task. An interactivity using their direct hands on experience, this demonstrated their ability on chosen elements, as colors or a symbolic representation of things in the surroundings. This made them to look forward to the next exercise where they can open up to various other applications of the learnt mediums.

In summary the exercise provides an interesting insight that gives a freedom to express, it goes to patterns which can be influenced to individual

understanding of its effectiveness. On enquiry, it was learnt that semiotic design was what they were comprehended. This was connected to the sign and sign processes that is semiotics using indicators, symbols, metaphors in visual communication to effectively communicate an idea. The colors through which, they could relate to their meanings, relationship of the signs and their effects on the communication using signs. They later used multiple mediums to enhance their understanding of the solutions.

This exercise emphasized that given freedom in hands on exercises followed by the peer group discussion and theoretical support initiated them to go for


Graphic design variations to communicate the effectiveness	Colours	Multiple elements
	85%	15%

Figure 26: 34 variations were made by students.

skill based practice to perfection which otherwise PCM biased students initially were not inclined to.

2.6 Exercise of the creative analysis through demonstration of few popular contemporary multimedia productions

Indian animation and multimedia production are available in abundance. There are mixed reactions expressed by the guardians on the empathy of social values as children seem glued to the TV and other sources of communication. The question arises if the intended theme embedded in the production gives only entertainment or the medium could pass on some ethical values too.

Few popular productions were chosen to demonstrate to the students on various production relevant issues, techniques used and the production processes etc. Samples of film-lets were selected from a wide range produced in different times to demonstrate the earlier production without much of technological interventions involved in their production to the present day practices and also, the future need and how the production took to the theme or the message preferably take a journey to the end production. The demonstration helps them to get an insight on the know-how of the multimedia productions.

Objectives of this interactive multimedia communication tool centric study were to give an idea of the mixture of the content in the present days context which are very much inter related mix of various presentation techniques. Designers encode information that requires to be decoded by the viewers. The easiness of decoding the intended message would be having the quality of a multimedia creator. The question arises if such is an inherent quality that can be nurtured with a structured training how to sharpen their ability, how to lead the students to the future need of freshness in presentations when technological helps are available. The media applications are to be fresh and thought provoking with respect to the usual real life and where real life is not directly possible to express what the message intends to, animation fills up the gaps.

As mentioned earlier multimedia is defined by the presence of textual content, images, auditory signals, video and the amalgamation of these through animations to be made interactive; interactivity has been a matter of discussion and interest since mostly the 1980s. A critical ideal input is to comprehend the

ability to interact and used to travel the metamorphosis between mass, interpersonal and intrapersonal as well as the connection between old and advanced.

Three batches of B.Des students were allowed to get a first-hand experience of the multimedia. Film-lets were shown to them for their views and were put under group discussion, specifically on the issues discussed on the story implementing direct reflection of abstraction in the mediums of video and for special effects, the use of puppetry, 3D/ character/ physical SFX CGI animation, cel-animation were justified.

Based upon the interaction among the students on their assignments, various application aspects of varied e.g., mediums of photography, qualitative usage of video, cel-animation, digitized cel-animation, stop-motion animation etc. were discussed. Instead of administering questionnaire, group discussion was preferred.

2.6.1 Films presented and the overall understanding

A few experimental films were based on case studies followed by group discussion on messages or story applications of various elements were demonstrated. The film-lets were selected from the areas of campaigns for topics such as anti-ragging, non-violence, anti-litter, anti-smoking, event promotional, anti-discrimination, morale booster, anti-corruption, anti-superstition, green campaign etc.

The mediums were categorized using a random sampling as represented in figure 27, chosen based on the message they were expected to express along with the techniques used. As per the available mediums of communication, they were comfortable to interact with i.e., ease of use.

The technique of Video documents events as they occur using a technique of accumulating moving images using a format of data storage as was initially done to record the image data on photographic medium of screen tapes to the digital medium used nowadays, has been discussed.

SFX is a different medium of communication, that effectively communicates the visualized abstract aesthetics of the content or imagined concepts.

Puppetry is a medium of communication that coordinated effectively uses manipulated direct displacement of objects, that usually abstractly resemble a living things usually aesthetic form that are given an abstraction through life or animated by a control unit which is mostly done by a human puppeteer. This information is usually communicated in form of abstract aesthetic stories or incidents.

Still it is popular and it gives a direct contact with the player or the puppeteer who communicates the interaction and the viewer for whom the message was meant for thus the receiver for whom the encoding mode of information can be crude.

3D/character/physical FX: three dimensional medium of communication now-a-days utilizes software to design and develop the scenario and objects, in the communication, that can be characters that enact specific roles. Physical effects or FX are unusually done for a large audience such as a stadium, a theatre through which the designer gets to interact immediately with the kind of response the audience gives back, the physical effects that are in the aesthetic from of actors, lights, audio etc., that can create an ambience of the presentation.

CGI is a method of designing the abstraction using dynamic images, using both static as well as dynamic images to communicate the message to the viewer.






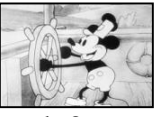
The computer generated aesthetically designed imagery used to animate images are mostly the dynamic images. The three dimensional abstract graphically realistic imagery have been seen in recent time, the two dimensional computer graphic use a quicker outputs where the final design is in the format of moving image. The Cel- animation has been the traditional form of animation that were initially manually sketched frame by frame with hands taking care of the aesthetics in the output, this technique was followed abstractly for a long time until technological changes in using video and later

computer graphic based animation prevailed in bringing the visualized interactions for a viewers mind.

2.6.2 Case studies

Given below are some samples, figure 27, commonly transmitted by electronic media as well as in various events used for the exercise.

Case studies A-1 Video and SFX based examples: In the case of the design promotional ‘Bindas Bol’, (Bol, 2007) the reporter inquires from male members of the society and gets a negative response. This is supported by a superimposed aesthetics in the message, could allow the abstraction on the placard held by the protagonist that communicates utilizing 41.5 % Indian Women have gone through unwanted PREGNANCY as the last word seem to have more effectiveness due to its style of having a word

Category of mediums of communication used	Case study I	Case study II	Case study III
Video + SFX A	 a 1 Bindas Bol	 a 2 Commonwealth games 2010	 a 3 Anti-smoking
Puppetry Based B	 b 1 Child Abuse	 b 2 Gali Gali Sim Sim	 b 3 Steam boat Willie










3D/character/ physical FX C	 c 1 Dis-crimination awareness	 c 2 Human puppetry	 c 3 National integration
CGI animation D	 d 1 Hanuman	 d 2 War Awareness	 d 3 Bombing Awareness
Cel-animation E	 e 1 Discrimination	 e 2 Unity Awareness	 e 3 Chhota Bheem

Figure 27: 3 random selected samples per medium of communication for demonstration and analysis.

displayed in all upper case alphabets such as to get the attention of the viewer with highlighting the central issue and its proportion usage.

Another responder responds in the negative of 'Nahih Kiya', that means have not, in Hindi and laughs out as if responding to a joke, a caption of 'This is your typical IRRESPONSIBLE MALE' again to emphasize the usage of upper case alphabets to enhance its effectiveness.

The shot shows 40% HIV patients are women, followed by a shot of a reporter running behind young women trying to get their views on the subject. The auditory interaction of reporter voicing out 'why is everyone running off from something that saves their lives?' This shot is followed by a shot that display a card that reads out a bomb will not go off if one says condom in Hindi. On one

half of the screen shows a video editing technique to display an image along with video that has coolies shouting out condom on the other half. This is complemented with news paper articles of the campaign on multiple mediums as in internet articles.

A text displays stoppage of progress, captions such as use of condoms going down as shown in the figure 28 with the person holding the placard too going



Figure 28: Bindas Bol - A person holding a placard that uses in the conceptual text.

down. This is followed by the probe if the viewer buys condoms, which some deny sheepishly along with a few who stammer at the mention of condom.

The case studies were given to the group of students, out of which 25% were female, from those who analyzed the given case studies i.e., that used it to students as their project area and have submitted to a competition in interaction design (Pedro, 2014). The outcome of task was found that a multimedia campaign can enable effectiveness in them, analyze an android



Figure 29: A 3D multimedia animation promotional event held in 2010 at Delhi

application development for sex education for university.

Case studies A 2 Video and SFX based examples: A promotion to the viewer using multiple mediums can be effective, such as the use of the auditory medium of a song by A.R. Rahman “O yaaro India bula liya”. It uses a mixed variety of mediums from old photographs of athletes Milkha Singh and Pilavullakandi Thekkeparambil Usha, or P.T. Usha (nick named Payyoli Express), Tennis Players Vijay Amritraj & Anand Amritraj, Pullela Gopichand shown with a fluttering Indian flag. A software output of a three dimensional logo animation of the theme logo of the event as represented in the mascot Sheru an aesthetic graphic design for games event was displayed followed by the sequence of the visualized abstract data in the depiction of the virtual form of photographs over a dynamic background displaying the statistics of the data of the number of events, participants, along with the icons of the individual sports. Some of the legends of sports such as decathlon champion Daley Thompson’s long jump visual footage seems to have been used to give an abstract awareness towards the sport, with the effective emphasis of New Delhi and a Virtual three dimensional graphical software model of the Jawaharlal Nehru Stadium, Delhi, figure 29.

The short film also shows a few of the tourist places of interest. The intricate art in the form of a few clips of video footage of hands with ‘Mehandi’ and tourists interacting with bangles and the dances, a costume of ‘Yakshgana’ and other cultures of the country, that displaying the rich food variety along with the festivals celebrated, the Taj Mahal etc. that were displayed in the promotional video footage. A glimpse of the security with CCTV (Close Circuit Television) footage was displayed to bring a sense of confidence to the viewer.

A planned shot of a pole-vaulter jump being superimposed over an abstract footage of the Qutab Minar, such as to give the viewer an aesthetic as well as an abstract visual element of surprise of the wow factor of having a visual of a jump over the structure Qutab Minar, displayed in figure 30, along footage of many other places of tourism interest and the multiple aesthetic dances of



Figure 30: A pole vaulted jump over the Qutab Minar being exhibited, using imaginative representation using video editing techniques

the nation, India. The snow capped mountains, a footage of a desert, the metro service, a basket ball player jumping with a sign board that reads Delhi 10 km, a lamp with a montage of silhouettes of many games being displayed, and nearing its competition the abstract visual of a gate opening and a butterfly swimmer jumps and displays the water sport's stroke being played on the road rather than on water, probably to give the element of the abstraction of the element of aesthetics displayed, a hand opens up to display the patterns of Mehendi having the words 'see you' in the end.

This gives the viewer an idea of the kind of experience that is in store for them to give a display how an abstract montage of multiple mediums of communication from past and the present makes an inviting ambience; and for that the various techniques used were discussed with them.

Case studies A 3 Video and SFX based examples– for anti-smoking :

Being idolizing with a hero, who smokes a cigarette i.e., under the abstraction of the pointless assumption of the protagonist leading the right path in real life too and the belief that with cigarette in one's hand, makes one feel like a man. A clip of the anti-smoking campaign, figure 31, assumption of the hero leading the correct path. In due process of the music video the designer uses the medium to bring an emphasis of the consequences of the habit, which

eventually gives the messages leading to the final one of being a dead man with a cigarette in the hand.



Figure 31: An anti-smoking awareness song by Gary Lawyer song, exhibiting a person lighting a cigarette while watching television.

A social message is transmitted initially through an aesthetic fantasy of the false pride that leads to an abstraction of the false pride that leads to the reasonable end.

Case studies B 1 Puppetry based examples: The medium of a puppetry based technique through which a social message transmission of child abuse, a physical and emotional ill treatment or neglect of a child was presented to the students. In many countries this is taken to be critical, many laws and rules exist to assist the same. Many different communities and regions interpret this in a more generalized way of four main factors upon which they are categorized i.e., neglect, psychological, physical and sexual.

There is an urgent need for an awareness of the serious implications of the crime of any act of failure on the interaction of a parent or guardian that can lead to harm can be considered to be a case of child abuse. The case-study displaying the plight of a child, figure 32 , playing with her dolls.

The medium used is cel-animation, the scene displays the back of a girl child sitting on a mat on the floor in front of a toy house. The hands of the child holds three dolls one of a man and a woman to depict the parents and other the child to depict herself; both the dolls have a smile on their faces indicating happiness to the viewers, and the hand holds both the dolls in one hand and



Figure 32: An Abused child is not evident from the scene, but when the point of view changes it becomes evident, figure 33.



Figure 33: An Abused child which was not evident from the scene, figure 32, became visible the point of view changes.

another doll dressed in a lady's attire being shown in the scene, the auditory medium interacts with piano music used to get the abstraction of the mood in the scene, the designer seems to be making the point of the treatment given to the child, the scene of the scenario having a parent well attired in the family in a way to create a mood of a happy family to the viewer, the child is put to bed, but the gist of the medium is disclosed by the designer's show of the situation that actually that is factual through a hand picking up the doll showing the

representation of the actual picture of a child with bruises on her face clutching the toy, in a way holding on to some security.

The child's face is depicted of having the eyes seem longing for care, figure 33, the final title communicates the words toys do not long for love and care and a few frames later a child does, using the effectiveness of video, character animation, audio and typography to emphasize the interaction of the communication. In today's world, it is a crime to abuse a child, which has come to effect due to numerous campaigns regarding the issue. The medium used is a cut-out animation technique with an aesthetic abstraction in technique with the use of puppetry, imaginative communication of social message. Students expressed that the chosen medium of representation in the consequences of the experience of the aesthetic and its abstraction in presentation from the point of view of the victim rather than from the point of view of the viewers; but they could not clearly articulate how it can be achieved.

Case studies B 2 Puppetry based examples: Muppets delivering a social



Figure 34: The interaction of the Muppets along with the normal people

message through 'Gali Gali Sim Sim' Muppet characters shown in the figure 34 using an Indian boy and girl Muppets based upon the local abstract folk tales to Muppet thus, trying to make it more effectively abstract than to western characters who might be preferred by the western viewers; its apparent effectiveness was successful with the medium favored by children in India watching the show in around 15 multiple languages along with English.

The students opined that characters and content links to target group contextual environment and the language adaption would be a natural preference.

Case studies B 3 Puppetry based examples: The innovation in the use of the abstraction in the aesthetics using animated film directed by Ub Iwerks Newness using practical expression of an abstract



Figure 35: Mickey Mouse in the short film Steam-boat Willie: an example of stop-motion animation

expression that was effective due to the intelligent usage of mediums reportedly for the first time in the world depicted through a innovate technique of the period, stop motion animation film of the debut of the famous character Mickey Mouse along with his girlfriend Minnie effectively to be communicated as shown in figure 35 .The abstraction in its expression of aesthetics in the imaginative interaction was effective due to its effective communication of the medium used reportedly for the first time in the world. It was reportedly the initial trials of artificially designing the world. It was reportedly the initial trials of artificially designing visual in motion and to see figments of imagination playing an effective role for the human eye was new, as a frame is displayed in figure 35 The newness in theme presentation and techniques up to date to the time draws ones attention.

Case studies C 1 character/physical FX examples : Shape and form of the animation to express an abstract message of discrimination aesthetically was taken into consideration. The case study was about an experience of an abstract communication used by the designer, through which the form of three dimensional objects in multiple number and various sizes as shown in figure

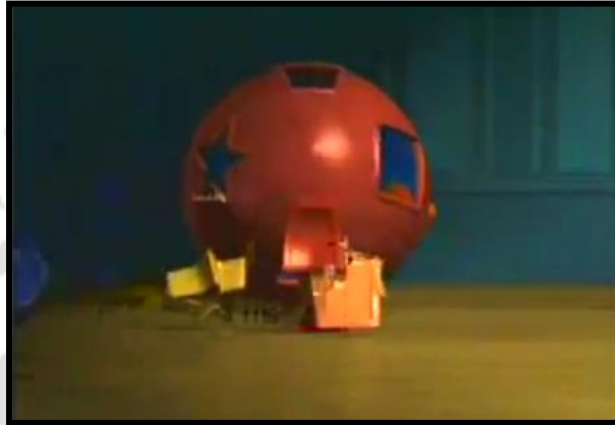


Figure 36: 3D animation short film using techniques of 3D software to design, shows the hollow sphere with slots in interaction with the other characters

36 of a sphere having numerous slots, with triangular, circular, square, star shaped etc. to fit in. Many three dimensional shaped objects enter the scene and briefly interact with the viewer and enter the sphere, an odd shaped object too, feels the need to be accepted but is unable to find a slot through which it can be accepted through. This is observed by the sphere, an abstraction in the way that the sphere opens itself in the horizontal plane to allow the odd shaped objects to jump in.

The sphere morphs (Gulrez, 2011) into Earth to depict the Earth's tolerance of the destruction done by mankind and still serving them. The final text message of freedom from discrimination and of children too having a right to live. The designer used an abstraction of the straight forward way to allow the communication to be effective with its simplicity as in the KISS principle, where the viewer was not given much of time to think differently and let the effective abstract aesthetic suspense in the scene be completed soon to be delivering the message.

This example was used to depict the abstraction of the depiction of the aesthetics of Article 2 of the United Nations Universal Declaration of Human

Rights (UDHR) states: “Everyone is entitled to all the rights and freedoms set forth in this Declaration, without distinction of any kind, such as race, color, sex, language, religion, political or other opinion, national or social origin, property, birth Anti-Racism or other status” (Maddex, 2000) and Furthermore another quote, “no distinction shall be made on the basis of the political, jurisdictional or international status of the country or territory to which a person belongs, whether it be independent, trust, non-self-governing or under any other limitation of sovereignty” (Bertucci, 1996).

The communication argues by displaying that an abstraction of using a three dimensional animation style of multimedia can impart human values in the young audience about the effects of discrimination very clearly by revealing the non- regular shape also need acceptance in today’s world. Article 1 of the UDHR as it states: “All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood” (Monteiro, 2014).

The experience, in its interactive imagination, and giving a communication of the nonfigurative tinge to the theme made it effective due to the unexpected turn of events. Designer uses the surprise element to bring the viewer to feel the effective punch, that could communicate the experience in portraying the aesthetic and abstract imagination.

Case studies C 2 character/physical FX examples: Human puppets express different kind of abstraction in the experience, figure 37. Characters termed as Zoo Zoos designed by Rajiv Rao as White human like figures with ballooned bodies and egg heads. Even though the communications experience in the form of the characters look animated, but they were actually human actors in costumes.

The ads were created by Ogilvy & Mather, the agency handling service provider advertisements. The ads were shot by Bangalore based Nirvana Films in Cape Town, South Africa.

After the students had a display of the multiple mediums of communication, the effectiveness values were analyzed based upon the testing the promotional of 3 seasons of 20-20 cricket competition, the stories interacted in a different



Figure 37: Human puppetry type communication used to promote an event were used for an advertisement

note with the viewers, the visuals, the visuals of the content of the promotional varied from the initial ones to the present, initially the promotional were made loud along with a slightly negative approach of interactivity. The effectiveness of the audio of the laugh of the characters had been toned down and the laugh was less effective in terms of giving the content the touch of negativity as compared to the initial promotional.

The nonfigurative storyline of the initial promotional for example an expectant father screams out when he sees his quintuplets shouts out, the designer exaggerates the idea by displaying the imagination of a Martian Zoo Zoo holding its ears to protect its ears. Playfulness with special character imagination created an ambience to the masses.

Case studies C 3 character/physical FX examples: The music video “Vande Mataram” was produced in 1997 as a studio album by the Oscar and Grammy winner A. R. Rahman. The album was released on the golden jubilee anniversary of India’s independence and has been instrumental in instilling a sense of patriotic pride and national unity amongst the people of India “Maa Tujhe Salaam” have had a profoundly positive and unifying impact on the nationalistic and patriotic feeling, by motivating the national integration effectively.

A critical and commercial hit, the title song from the laser show album is one of India's most popular songs of all time sung by Rahman himself, the song has come to represent a feeling of patriotic unity for India and has been performed or played at several national and regional events in the country. The popularity of the song was such that in 2002, when BBC World Service conducted an international poll to choose the ten most famous songs of all time from around 7000 songs selected from all over the world, the song Maa Tujhe Salaam was voted second. The track also holds a Guinness World Record for being the song performed in the most number of languages. Indian singer Sai Psychuck Manapragada performed the track in 265 different languages to achieve this feat. Rahman was also issued a Guinness World Record certificate for being the composer of the original song in being successful in providing abstract visuals for a mass gathering; a laser show as displayed in figure 11, at IIT Guwahati during its technical festival Techniche 2009 was created. It appeared that this song and its visualization demonstrated the essence of patriotism for the present generation in a larger scale. The entire gathering was gyrating to the tunes of A. R. Rahman. This exercise let the students feel that the visual and auditory synchronization in its presentation appeared to have a mass appeal that they may not alone be presented to individuals to create the same.

It was an example demonstrated to the assembled students about the combined value addition by using mediums of lights and sound i.e., the enhanced effective communication using multiple channels of the human senses in the visual and auditory mediums of interactive communication.

Case studies D 1 CGI Animation examples: Ethics through epic story with playful presentation appears to fit to draw the target group's attention, i.e., specially for children, it gives universal viewing pleasurable. The film Hanuman 2016 was played for the students and used for analysis for an animation film entitled Hanuman, figure 38, who is also considered to be the elder brother of Bhima, for having the same father, Vayu or Pavan a character in the Indian epic, Ramayana, who is known as the god of wind. During the Pandavas exile, Hanuman disguises himself effectively as a weak and aged

monkey for Bhima in order to subdue him with his tail spreading it on the path that Bhima was to cross.

Bhima, not knowing of the true identity, asks the monkey to shift his tail and let him go; it expresses an Indian faith of ethics that no living object should be dishonored by stepping across a living body. In reply Hanuman tells him to shift it himself. Bhima tries, but is unable to do it despite his great strength,



Figure 38 : Digitized cel-animation of a legendary character of Hanuman, a scene from film Hanuman expressing full of playfulness.

sensing something amiss, he requests the monkey to show his true identity, which is then revealed.

Upon Bhima's request Hanuman is also said to have enlarged himself and shown him the same size in which he had crossed the sea to go to Lanka, while searching for Sita. Pleased with Bhima's respect during the great battle of Kurukshetra, Arjuna entered the battlefield with a flag displaying Hanuman. The incident that led to this was an earlier encounter between Hanuman and Arjuna, where Hanuman appeared as a timid monkey before Arjuna at Rameshwaram, where Rama had built the great bridge to cross over to Lanka to rescue Sita. Upon the thought of Arjuna to build a bridge of arrows capable of bearing his crossing, rather than Rama taking the help of monkeys in building a bridge, Hanuman challenged him to build a bridge.

Arjuna, unaware of the monkey's true identity, accepted the challenge. Hanuman then proceeded to repeatedly destroy the bridges made by Arjuna, who decided to take his own life. Lord Vishnu then is reported to have appeared before them (Hanuman, 2016), blaming Arjuna for his arrogance and also Hanuman for encouraging as well as getting Arjuna to feel hopeless. As an act of apology, Hanuman offered to help Arjuna by stabilizing and strengthening (re-design) his chariot during the forthcoming great battle with the Kauravas. According to legend, Hanuman is one of the three people to have heard the Bhagwad Gita from Krishna, the other two being Arjuna and Sanjaya.

The case study specifically was selected to let the students have a know-how of an ethical component and in being interlaced using selective absorption of the abstraction in the interactive communications of the cultures of theirs, i.e., using mythological characters to assist to the context of the present time and allow the character to interact with the present day situations, through a pleasurable of animated representation.

Case studies D 2 CGI Animation examples: A war awareness campaign using cel-animation technique, figure 39, in which the designer sheds light on the negligence of the people who wage war on each other such as to prove their supremacy over others and in the process destroying their childhood aspirations of the future citizens of the world.

The abstract aesthetic in the interactive communications, lets us to believe in it, such that it can be used in day to day designs. The value of life and culture



Figure 39: War awareness campaign, showing a sand castle crumbling.

can be represented abstractly in many different ways using playful mythological as well as modern agony to leave an impression on the viewers.

The cel-animation is an effective multimedia communication starts with a scene of a child playing in sand to entertain oneself, but the sand castles keep disintegrating and the child does not lose hope and rebuilds the sand castle again and falls, this happens many times. The designer allows the audience to see the cause for the castles to collapse with a wide shot of the scene of two people in military uniform playing chess using the military weapons to destroy each other on the chess board ; politics assist in waging wars and the innocents suffer.

Cel-animation was emphasized successfully, by using the innovative representation of the theme. By bringing in elements a feel of the effectiveness of a video medium from the dolly shot sequence. The medium of video in a camera moving frame shot to emphasize on the child building the sand castle, who keeps rebuilding the sand castle and every time repeatedly it crumbles down.

The auditory medium is used for the sequence to help in making it effective of the scenario the child is building the castles in i.e., gun shots, bombs etc.,. The designer effectively uses graphic elements of war tanks along with other weapons in the scene to signify the scene of a war zone. The designer introduces the surprise element of human hands placing the weapons on the scene and on showing the scene of two soldiers in uniform playing a board game. The designer also seems to emphasize on the children who are the sufferers in the outcome of the conflicts of grown up. The development seems to be a never ending process as every day the news keep showing static and dynamic interactive rapid progression of a series of static images to effectively convey the abstract communication of the first image to its concurrent images, hardly giving the generations next a chance to live life freely. The animation tries to communicate the emphasis of the consequences of conflict and their repercussions in the present time.

Case studies D 3 CGI Animation examples: The interaction of the



Figure 40: A war scene of children having to suffer the wrath of elders of the world

Cel-animation of Smurfs (Crump, 2013) is an awareness short film using an animated approach to appeal not to let war destroy the world of childhood-Campaign by UNICEF's (Jolly, 2014) through which it tries to communicate the scenario of the Belgians to raise money for the rehabilitation of former child soldiers in Burundi and the Democratic Republic of the Congo - both former Belgian colonies.

As shown in figure 40 of the damage caused by bombs that are used to destroy everything that it touches, it destroys a happy gathering, it destroys houses, it destroys families leaving the innocents babies crying. The communication uses conceptual and creative components of experience to create an awareness. The violence can also lead to Children taking up violence as a way of life which will surely turn the entire world a very unsafe place as quoted by Mohandas Karamchand Gandhi also known as Gandhiji in the region, whose quote read "An eye for an eye only ends up making the whole world blind" (Baker, 2012).

The same could have been displayed abstractly through words, images, and video and also utilizing the techniques of multi-media through which the message using the technique of animation can have better clarity for young minds. For countries that are not part of the conflicting areas it was not able to get the viewer to get the essence of the conditions that many in the world live in constant fear of bombs and gunfire everyday, which can be harmful.

Case studies E 1 Cel Animation examples: The same could have been displayed through words, images and direct real life video but with the use of multimedia animation presented more clarity for young minds. From a violent scenario to another scenario where not a physical violence, interacted



Figure 41: Unity interacted by multimedia design intervention.

by multimedia design intervention imagination to make things work but emotional violence matters, in the case study the author used the medium of cel-animation technique to allow the communication using inventive and nonrepresentational in the designs with having abstract viewer to get an awareness of children's aspirations at a tender age. The film's cast having a group of children playing as displayed in figure 41 stop suddenly, when an expressionless child walks into the area; at this juncture the author uses a different medium to bring an effective communication using aesthetic i.e., video to display a hand sketching out a face on the character to allow the child to be accepted. The entire sequence of events have a visual and conceptual content in them, the video of a hand drawing an expression and its effects on the group of children, have non verbal communication coded in them. The expressions of one another with the expressionless character enters, used the nonrepresentational to communicate the interaction and then uses the nonfigurative with a smile that seems to be a universal expression for acceptance.

Case studies E 2 Cel Animation examples: In the Vijaya Mulays design of a social theme communication using the technique of cel animation film to spread the message of unity through "Ek Anek Aur Ekta" . This is an animation film for children designed by Vijaya Mulay in which the value

system, was abstractly communicated using aesthetics in cultivating it through an emotional nostalgic presentation. The author seems to have studied the children preference of social peer group; entertainment and joy of playfulness from the elements in natural surroundings. Right from the first scene, the imagination, subtle inquisitiveness of a child becomes evident when the younger sibling starts innocently questioning his elder sibling about the song.



Figure 42: An elder sibling using a song medium of communication to impart short messages

Checking her surrounding she uses the auditory medium being the most effective for the situation she was in and starts to sing, and to answer him she takes the help the medium of storytelling to help, make it more effective.

Noticing the younger sibling unable to comprehend the story, a sequence is displayed in figure 42. The elder sibling communicates using her experience, using aesthetic abstraction in the use of visual imaginative ideas to be used to enable her younger sibling to understand her story taking examples from the interaction of the younger sibling with their surroundings by using nature, she explains the concept of one and many. And thus the story takes an abstract change when a flock of birds get caught in a hunter's net and with the use of an aesthetic abstraction from their group interaction they fly away from the hunters clutches in unison to escape from the hunters net and get freed by rats cutting the nets. The story ends with the birds getting freed.

Case studies E 3 Cel Animation examples: Chotta Bheem – a popular character with full of playfulness and helpfulness. Two episodes of the cartoon animation film for children serials with two different natures Laddo Chor and Chutki were presented to the students for viewing and analysis . Laddo Chor

Kaliya is the story of someone stealing sweet balls from Chutki's mother's sweet shop. Chotta Bheem becomes the obvious culprit as he is normally the one who does such mischief and Chutki's mother suspects him, but Chutki



Figure 43: The image from an episode of Chotta Bheem having Chutki's mother

saves him by saying that Chotta Bheem paid for it. Chutki's mother suspects Chutki of trying to save her friend and asks for the money paid by Bheem, Chutki breaks open her piggy bank and gives all the money in it to her mother. Chutki's mother as displayed in figure 43, realizes that a lot of money had been paid for the sweet balls. Chutki goes out to look for Bheem, whom she finds enjoying the sweets along with his jungle friends. She confronts him and Bheem laughs it off.

The inference from the story and its sequences along with a playful presentation that was built by Rajiv Chilika in visualizing a child-like character such as to making it easy for the viewer to interact with the story line through the medium of animation.

A different episode has a volcano erupts throwing a huge boulder down on the villagers, in which Bheem saves the village, by risking his life to stop the boulder and throws the boulder back to stop the flow and saves the town. Here the story fails to display the effectiveness of the right path, as in one case a friend lies to her parent to save her friend and then the friend risks his life to save the village. For a child to interact with the character seems to be easy, as the designer seems to have the data of the interaction of children's behavior

along with the physical actions of children, which seems to have been effective in letting the viewer interact with the character and the communication that is being transferred, which at times takes a violent turn which can be controlled to get the 'feel good' factor.

The essence of the case study is to analyze how they can adapt to the situation that one finds him in, as shown by Chutki while saving her friend from the deeds repercussions but committing a SNAFU(Situation Normal All Fouled Up (Royce, 2011) for allowing her friend from causing harm to her mother's business. There can be other ways to assist Chutki from causing her mother loss as well as keeping her friendship intact, i.e., by imparting an awareness of the repercussions of the quality of the sweet balls of ladoos suffering due to the pranks of Chotta Bheem and helping the show to go on without causing harm to the viewers too who might take the actions of the ideal experience. Interaction of an idea in communication design finding the most effective solution for a conceived idea. Here a role of adequately presenting the story. i.e, the message may also become a designers need to play through the creative representation.

The case studies approved to be helpful to the students to understand the story line's abstraction and the production techniques used through the mediums of video and special effects case studies of Bindas Bol, Commonwealth games 2012 and in the Puppetry medium of communication Gali Gali Sim Sim, Steam Boat Willie, the 3D, character and physical effects mediums of discrimination awareness, mobile service promotional and National integration, computer generated imagery mediums of Hanuman, Anti-war campaign and Smurfs campaign against bombs, and the cel -animation medium of discrimination as well as unity awareness Ek Anek Aur Ekta and Chotta Bheem.

2.6.3 Observations

Experiences gathered through viewing the presentations and group discussions among the learners' ad practical follow ups of media techniques, it is expected that students would do their best in the next level of the assignments to produce communication films of their own.

The group discussion cum survey observation was conducted to understand their inherent inquisitiveness of the knowledge domains of the software, principles to develop the final design. From the survey, it was observed that a majority of them has a good knowledge, less than a quarter of the group had very good knowledge of the task, a very small number of them were manageable while another less than a quarter had a poor knowledge of the interaction with the software to complete the task.

For those that were in the poor software knowledge category, more interactions with the mediums are recommended and additional supportive training can be given to them. Students could get an analytical approach of using design principles, and know-how technique to use the mediums of Video + SFX, Puppetry /2D –animation,3D/character /physical FX, CGI animation, Cel-animation, Stop motion effectively to make the interaction more successful.

From the survey it was observed that a majority of close to three fourth of the students had a good knowledge of the final design that they could narrate if they were to add aesthetics that could communication abstraction through the films they were presented with, very few had an average knowledge of the final design, very few had a poor knowledge while a very few had a very poor knowledge of the final design on enquiry it gives a proportionate view for those who after their joining in the design discipline with animation and they interacted with others who could not as they were still unsatisfied and through longing for different discipline of engineering of their choice so mostly were not interested. For those that fell in the poor design knowledge category, more interactions and motivational drive through counseling to be done.

The task to test out the effectiveness of their comprehension of the mediums of interaction to analyze the acceptance of the different mediums of Interaction design task for their effectiveness. From the survey it was observed that a very few of the them had average knowledge clarity of the design task, less than a quarter of the group had good knowledge clarity of the design task, and more than three fourth had good knowledge clarity of the design task of the interaction with the software to develop the final design.

The survey task to test out the utility of the knowledge acquired from the students' perspective of the mediums of interaction to analyze the acceptance of the different mediums of interaction design. This survey enabled the observation of less than a fourth of them having an average knowledge clarity of the up to date literature analysis, more than quarter of the group had a very good knowledge up to date literature analysis, nearly half having a good knowledge clarity of the up to date literature analysis conducted of the interaction with the task to develop the final design for their effectiveness. This helps one understand the effectiveness based upon the need for the literature survey.

The understanding from the survey was that a majority of less than quarter of them had a poor knowledge of the medium for collection of material adequate for the task, a very small percentage had an average knowledge of the medium adequate for the task, less than quarter had a very good knowledge of the medium material adequate for the task, and it was encouraging to note that more than half had a good knowledge of the medium of material adequate for the task. This needs them to interact more with the mediums such as to evaluate the effectiveness of communications' experience

From the survey it was observed that less than a quarter of them had an average knowledge clarity of the up to date literature analysis, more than a quarter had a very good knowledge up to date from the literature from the prevailed films analysis in the mediums of communication, close to half of them had a good knowledge clarity of the up to date literature analysis conducted of the interaction with the task to develop the final design, that helps one understand the effectiveness based upon the need for the literature survey.

The knowledge of the visualized final design of having to use the mediums of Video + SFX, Puppetry/2D –animation, 3D/character/physical FX, CGI animation, Cel-animation Stop motion effectively to make the interaction effective From the survey it was observed that a majority of close to three fourth of them had an good visualization of the final design, a small percentage of them had an average visualization, a small percentage of them

had a poor visualization along with another small percentage of them having a very poor visualization of the interaction with the software to develop the final design, needing them to interact more with the mediums such as to evaluate the effectiveness of the communication experience.

From this analysis the design task was again observed that a majority of them had good knowledge clarity of the design task of the interaction with the software to develop the final design. The task to test out the effectiveness of their comprehension of the mediums of interaction to analyze the acceptance of the different mediums of Interaction design task for their effectiveness.

A medium has specific ability to communicate the message content through encoding, transfer and delivery of the information. A medium of entertainment has data from the creative field of art, opera, television, movies etc., a medium is essential to interactive design study the effectiveness of the experience of a group of them of their assumption of the effectiveness of many mediums which have been used by them to bring effectiveness to their designs was taken up based upon the clarity of the design task, which needs them to interact more with for its effectiveness.

The survey observed that a majority of the students had a good knowledge clarity of the necessary literature survey conducted for the interaction with the task to develop the final design, an average knowledge acceptability of the medium of theirs, good knowledge time taken for the output for the final result of the medium of theirs; it helps one to understand the effectiveness based upon the need for the literature survey.

A majority of the students had an adequate awareness of the mediums of communication as well as the abstraction of the end result, with a sound clarity of the task, good knowledge of the interaction of the design task. This gave an indication that the students could take up tasks on their own and deliver the effective communication if given a chance to do so.

This helps one to understand the effectiveness based upon the need for the knowledge clarity, literature survey and its knowledge acceptability of the

medium to imagine a design solution from the information acquired so to design an effective information flow to benefit the end student.

Students preferred a multiple medium based approach similar to the design of 3D design in which the interaction happens with physical prototype making use of the materials of clay, polystyrene, wood as well as every-day objects to make them interact effectively.

2.7 Review of studies in the domain of interactive multimedia design

To interact with the students understanding of multimedia and their utility using random selection of over 15 designs in the mediums of SFX, Cel-animation, Puppetry, Video and Stop-motion Animation were given to the group of students to be analyzed and their inferences taken of mediums in which they would to interact in, the conventional medium of cel-animation, puppetry along with the new medium of SFX did have less or no preference as compared to the mediums of video and stop-motion. This phenomena could be due to the lack of awareness about the other mediums i.e., stop-motion can be generated comprising from multiple mediums such as audio, video, pictures and other mediums to bring out an effective communication.

This gives the student many options to interact with. While video too is easy to capture but not many options available for using it in multiple ways such as to suit the student, while the mediums of puppetry involves making the puppets thus not many takers, cel-animation involves manually sketching each cel which is time taking hence less preferred.

The medium of special effects widely known as SFX, again employs the skills of creativity and not software knowledge alone and hence not many takers due to the time taken to complete the task. This assisted in comprehending the need of the students and use tasks that can be completed using the necessary mediums utilized to bring forward the need for interactivity in design.

From the analysis of the studies in the domain of interactive multimedia design, the reason for the specialized mediums of SFX and Video was not preferred by many while stop-motion which utilizes nearly all the mediums

such as SFX, cel-animation, Puppetry, Video was most preferred could be due to the abstract nature of the medium which was more interactive as compared to the other mediums.

As the medium of stop motion had the flexibility to aesthetically innovate and abstractly improve the final design as per the need of making it effective. From the abstract interaction it was communicated that the medium that has been in the limelight due to its capabilities of using technology to be communicating aesthetic content using multiple mediums in the most desirable medium such as the medium of special effects, SFX having a surprisingly a very small percentage had chosen cel- animation as a medium of interaction, by less than ten percentage had chosen the medium of video to interact with, by more than a quarter of them but surprisingly a medium that is not a very common nor conventional one the stop-motion animation medium had the majority of the students interacting, on probing it was found to be the most preferred due to its interactive methods of designs in which the student has the flexibility to be used depending upon experience or observation alone, without using scientific method or theory.

It requires observing as many similar natured multimedia along with animated communications to be acquainted with the presentation styles and techniques available to make it effective to design.

2.8 Conclusion

The study arrived at an understanding that the students level of understanding of the effective multimedia communication design based upon the experience of varied levels of promotional in the Indian market of their own. This could bring out specificity of effectiveness in a specific context that was evident from the ease of the use of stop-motion animation or through a continuous film shooting the film using imagination from figures or real life objects; and techniques to its ease of use and interactive mode.

The expressions of communication's interactivity, of the stories being narrated being done simultaneously, allowing usage of mediums to be interactive with the given story line. The story line could be modified if needed to assist the imaginative communication of having instantaneous modifications with the

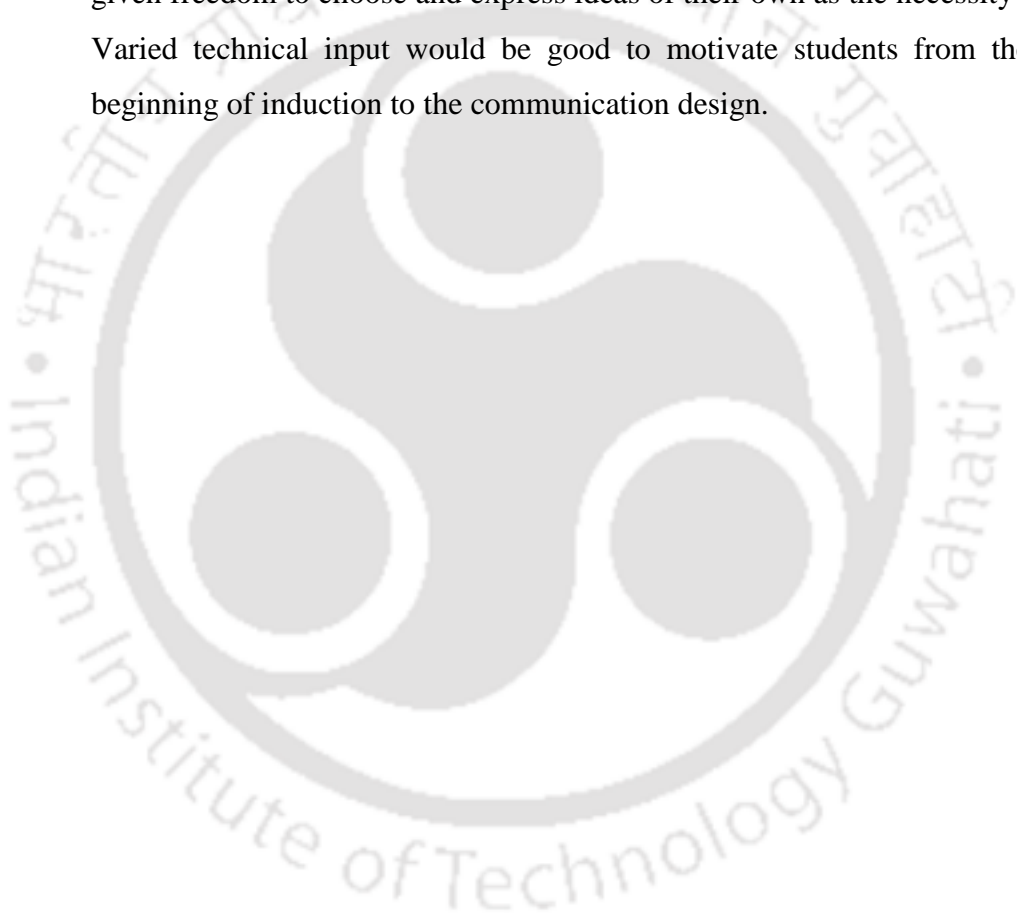
need. The students get adequate knowledge and experience of the basics of the mediums, and given a task they can use the available material and depict the outcome by following more than one way.



Chapter 3:

Imaginative communication presentation of theme in search of effective communication

The chapter deals with the experiences gained by the use of various multimedia techniques to represent social themes to communicate to a specific target group as well as with universal appeal. It is noticed that students can be given freedom to choose and express ideas of their own as the necessity arises. Varied technical input would be good to motivate students from the very beginning of induction to the communication design.



3.1 Introduction

The context of effective multimedia communication can be interpreted in many different ways and as well as in many different fields likewise. Expression of themes through abstract imagination is done in many different ways. To allow this the effectiveness of the concepts of design can be easily comprehended. The essence of design can be imparted through the day to day activities, for which a set of experiments were carried out to let the students feel comfortable as well as confident in the pragmatic attempt, to learn the fundamentals of design effectively. The fundamentals can be put in simplified form through discovering design elements in various mediums of communication that are used commonly.

Students normally try to implement most of what their learning of the subject allows. It has been experienced that, there is a lag in following the technique if the learning techniques become lengthy. Students communicate their talent with their acquired knowledge and it has been observed that, if the learning techniques become lengthy, many-a-time they lose patience.

The next step of the trial was to check if by giving freedom in the usage of their desired mediums of communications to represent a social message gave them the motivation to learn the technique and could follow the procedure if they had missed it earlier or can be acquired from friends.

3.4 Objectives of the exercise

This chapter deals with such experiments with the below mentioned specific objective to see how students take up the challenge to represent a given social theme or message where the essence of the interaction with the maximum and minimum interactivity of the mediums is crucial. Techniques of presentation or abstraction in their imagination can play an important innovative part in framing a training program.

3.5 Experiments: theme based

Everything that can be a means of information collection in the study, can be an effective study tool or a study instrument as observational forms, interview schedules, questionnaires and interview guides. The building of the study instrument is the primary practical step to carry out the study. The methodology to collect the data for the study as well as an instrument to collect the data needs to be put in place. For primary data of the study, a study instrument needs to be designed or select a tool that has already been tested.

3.3.1. Setting up the Experiment: Planning and Conducting Survey

Everything that can be a means of information collection in the study, can be a study tool or a study instrument as observational forms, interview schedules, questionnaires and interview guides. The building of the study instrument is the primary rational step to carry out the study. The methodology to collect the data for the study as well as an instrument to collect the data needs to be put in place. For primary data of the study, a study instrument needs to be designed or select a tool that has already been tested.

This, in turn, brings more effectiveness to the scheme of the study of Blueprint of the chart of the concept of a construction. To depict the diagram made from the doodles of the dummy formulated which makes up for the outline of the paste-up of the perspective from the tracery of the tracing for the treatment of students, parts of students, a group of students, and other living things. It has a wide application in many different mediums of design.

3.3.2 The context of Interactivity

It can be interpreted in many different ways and in many different fields; likewise the same is practicality of the experience, interactive imagination, communicated in many different ways by the students of multimedia design. To allow this segment, the effectiveness of the concepts of design that can be easily comprehended, the essence of design can be imparted through the day to day activities. A set of experiments were planned to let the students feel

comfortable as well as confident in communications experience, of the interactive communication of the attempt to learn the fundamentals of design effectively. The fundamentals can be put in simplified form through discovering design elements in the many mediums that are used commonly.

The students profile – JEE cleared students along with a successfully clearing an aptitude for design (Chakrabarti, 2011) whose students are between the age groups of 16- 18 years of age. The target students were 81% Male 19% Female.

A focus group is necessary for design, a focus group can be an effective method of qualitative study in which the target students are inquired about their understanding, views, assumptions as well as points of view of a design. The inquiry is given in an interactive session in which the students can feel free to interact with other members of the group. This procedure may be informal as well as formal, with a group of 5-10 students, smaller groups of 4-6 students may also be done.

These smaller groups can be called focus groups. These groups vary i.e., two-way focus groups in which one focus group observes the other and discusses the observations of the interactions and results. Dual moderator focus groups have two moderators, in which the first moderator makes sure of the session progresses seamlessly, and the other makes sure of the subject being taken into consideration. The challenging moderator focus group has two moderators as mentioned earlier. Take different sides of the topic that is in focus with debates being motivated. Respondent/client moderator group has one of the respondents being queried about to interact as the moderator provisionally.

An online focus group of new media is enabled to affect the interactivity effectively between the members of the group. The many areas in which the students planned to work in were in the areas of Smoking, Alcohol, Littering, Racism, Sex Education, Daily routine, Promotional, Music Video, and Social Causes Awareness.

3.3.3 Identification of students segment and respondent profiling

Profiling can be standardized by the data accumulated of the students' segment that usually is analytical, geographic, and psychographic by utilizing a graphical representation of the relative strength of the distinguishing characteristic or quality of an individual. It may not be possible to locate an uni-profile, as well as manageable types of students profiles which can be utilized to locate all the students of a selected segment. A limited number of profiles can be adapted to an intended majority of the students in each segment.

3.3.4 Administration of the test for the Focus Group

A focus group test is not easy to predict the interpretation or response to the queries on a discussion guide, usually when the guide is not in the common language. For this a pilot test becomes critical. The primary copy of the discussion guide is not free of problems and pilot testing of the queries become important in the design of the discussion.

The test incorporates the query of the questions discussed for a crucial part of communities having similar and matching with the chosen group, to access the effectiveness of the queries. In a wider focus group study, the pilot testing may not be possible. In the case of inability to identify a suitable group from the community, the queries can be directed to specific individuals. As its essential use of the pilot testing has to be the identification of queries are easily evaluated as well as if the queries and their significance to interact effectively the imaginative experience, communication planned for the study.

3.3.5 Summary of Responses of Focus Group Study

The comprehensive study of the connection between the survey feedbacks can be displayed in more details as compared to the prior comparisons. A continuous attitudinal response in a focus group is done using the combined continuous attitudinal response technology with the survey study for the same. This method pairs two mediums allowing each medium to effectively use the

communications interactive experience to assist the interactivity between the mediums.

3.3.6 Some Observations on the Methodology and its Limitation

To get the students' perspective of the communication experience with the maximum and minimum effectiveness values of the interactivity of the mediums is crucial. To measure the values of the communications experience, interactive communications that are consistent with the medium of interest under consideration plays an important part in the study. To evaluate this effectiveness of the data towards being able to attain the goal, categorization of the data using the sorting techniques which are available in MS Excel and similar programs. The assignment done by students and the outcome is being presented below.

3.3.7 Sample size

To test the effectiveness of sketching without peer intervention and with peer intervention, communications experience in using creative imagination was used. In the design task of having to use interact with a natural medium of having to communicate a design concept was tried out. It gave favorable results and was taken forward by having to use the technique of seeing perceiving and sketching a design concept was practically tried out, an awareness test was arranged for the students. The students' profiles were as follows - 21% of the students were from Andhra Pradesh, 15 % of the students were from Assam, 13 % from Madhya Pradesh, 13 % from Rajasthan, 10 % from Bihar, 10 % from Uttar Pradesh, and 3% each from the states of Gujarat, Kerala, Maharashtra, Manipur, Punjab, Delhi, figure 44, 8 and 9.

The students were taken for the realism in the experience, the communicative imagination of allowing an effective method of design. Students enriched by such feedback were asked to give their understanding on their own production. At the end, their projects were put under peer group reviews as well as presented to others for common views placing in the exhibition hall at Department of Design.

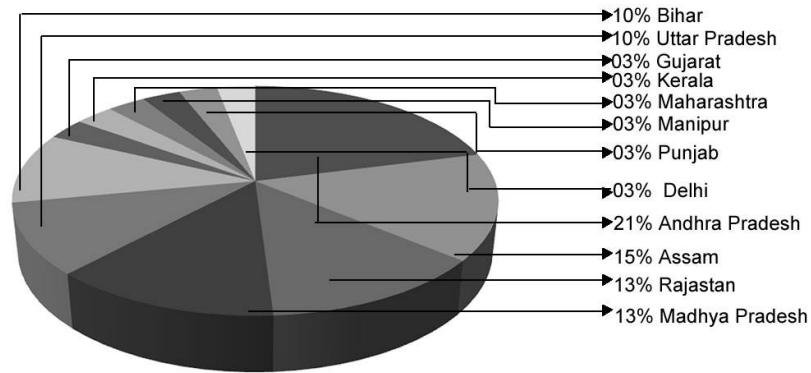


Figure 44: Students profile from multi cultural backgrounds Regions of India

3.3.8 Results of the Survey (Tabulated Results of Field Experiments)

The students were given an hour to analyze a given physical object of a product design, and represent it effectively such as to give the viewer a comprehension of the design.

3.3.9 Students' assignments and analysis of their performance

The students having a multi-faceted background from nurturing their own pet creative concepts waiting to let them loose were taken through each of the case studies, giving them the necessary data of each of the cases along with discussing their queries about each of the case studies. The students were then given the designs for them to individually analyze the data through a faculty jury board to give necessary feedback between initiating the assignments to delivery of final project several times, along with discussing their queries.

3.4. Conducting the experiment: Students' multi-nature assignments

Assignments were selected based on some social themes. Students were asked to list down as they feel important social issues/ messages in today's context and then the most important being chosen by peer group choice. In various realities in the experience, story planning and imaginative communication, tasks, the lacuna in the students understanding were singled out; is followed by learning by doing the principles.

To have experience in creative imagination, the production task covers sketching without peer intervention and with peer intervention to the selection of varied medium suitable to communicate a concept was tried out. It gave favorable results. Hand sketching was given emphasis to demonstrate the imaginative framework.

The study brought forward the hypothesis of being valid from a rudimentary experiment of using the color theory. This is to emphasize the effectiveness of the interactivity to augment the learning of the medium and to use its effectiveness in other mediums i.e., the experience of the task of using interactivity as a tool to make the learning effective and learning by doing (Gaiziunas, 2013). That was the abstraction in its experience, interactive communication in the imagination, interactively designed by the students by using more than one medium of communication for it to be effective.

3.5 Conducting the Experiment: Assignments

The only method of testing an assumption can be effective, is by experimenting, to understand the inferences of the experiments starting from rudimentary tasks of coloring and learning by doing the principles of animation. In various realities in experience, imaginative communication tasks, the lacuna in the students' understanding was singled out i.e., the interaction of the students with the design which was the center of the design and the design becomes ineffective if there is a lack of interaction.

Assignment 1: Swatch IIT Guwahati

The assignment was undertaken to spread an awareness of cleanliness and anti-ragging for IIT Guwahati campus residents (students and staff-faculty) so that students can become aware of their immediate surroundings and from that how a stop-motion production can be visualized.

Assignment brief: Only available mediums to be used, obscenity to be avoided and, the end result is to be easily accepted by the peer group and select campus

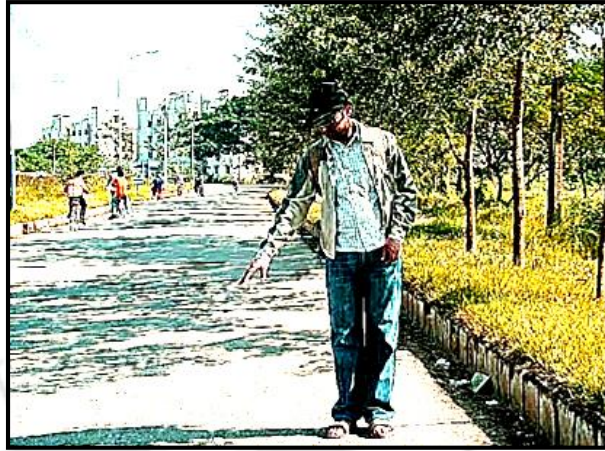


Figure 45: Litter free campus, smoke free campus – a stop-motion animation

residents through display during Department's annual exhibition. The students were given freedom to design using any medium of communication for the community they reside in, within a time limit of 30 days to come up with their productions. It was a group assignment and during group discussion among the students, they themselves distributed their individual roles, from story-lining, actors, video medium and post production finalization. The final outcome was a stop-motion animation of the consequences of littering the surroundings as represented in figure 45 that shows a student littering the campus, who ends up realizing his mistake when the dustbins accost him into submission. The communication could have been apt for the campaigns in the present time with the nation waking up to keeping the nation clean with campaigns..

Assignment 2: Anti-ragging awareness / Eve teasing

Thereafter with the feedback, inputs of the peer group discussion on the assignments refinement as they feel necessary were done. Students finally presented their concepts along with a story-board, to a larger group. Assignments were on a few anti-social elements that bring distaste to society that we live in, trying to impart awareness to the tormenter as well as the accomplice who indulge in the action of ragging, and that followed a sequence of a short story of a young lady being repeatedly harassed by the senior students' aggressive behavior as represented in figure 46. Another

senior student watches as a mute spectator after being silenced by the other senior students' aggression. The medium of stop-motion animation has been



Figure 46: Anti-ragging awareness from indulging with anti-social activities.

chosen as in the communities that the victim resides in too is not very supportive of the soft-crime, which in recent times seems to have escalated to unimaginable limits with the problem of eve teasing taking ugly turns, as reported frequently. The students were given the instructions that there should be no un-parliamentary language, obscene gestures in the whole presentation and identity of the actors required to be concealed

Assignment 3: Awareness against tobacco addiction

The design starts with a protagonist demonstrating the activities of every day which has a smoke first, in which the students evaluated the interaction of stop motion with an experiment of using a paper sketch as a thermometer which has a life in it.

This exercise was initiated to spread an awareness of the harms of abusive substances. Instructions were specific that the final deliverable would be a Video and would apparently be appealing to young students who with fantasy easily fell prey to smoking.

Anti-Smoking printed on the top and the color red used to interact with color to bring an effectiveness of life in red that reduces with every puff as shown in figure 47, which tries to depict the reduction of the life span with the use of harmful substance is followed by the magical sequence of events that depict the protagonists nature of trying to present himself presentable with the trial of

shirts, with an instruction to the coat to come on its own and get clothed in the body, which is followed by the footwear too doing their job on their own; he gets ready and leaves his room.

He walks on the corridor disturbing the inmates as well as littering the path with the breakfast that he has in the canteen instead of the mess; the dustbin interacts with the litter.

The protagonist walks on the road disturbing the cleanliness of the campus, he reaches his destination and does the same again playing pranks as well as littering the campus, after the interaction with his friends he litters the surroundings and shows his happiness on the attitude, he walks away, he is followed by his tormentors, the dustbins who were not given a chance to be used who surround him and he asks for their forgiveness and is allowed to go.



Figure 47: Anti smoking awareness using graphic design elements of line and color



Figure 48: Anti smoking awareness using line and color to bring emphasis

The inference of the multimedia design was that smoking is harmful to life as well as to keep the surroundings litter free. The effectiveness of the rudimentary design was evident from the use of the elements that could make the communication of the Red colored line diminishing to communicate the reduction of life due to the use of harmful substances, figure 48.

The learning from the interaction was that, any medium can be effective if used appropriately, as was used in the case, from communicating the need for spreading awareness about the effects of abusive habits of smoking, even teasing and littering having its effects on the student themselves was the end message of the multimedia communication as shown in the figures 45 and 46.

The use of multiple mediums of design i.e., effective multimedia communication of video and animation in a technique known as stop-motion animation film was used to communicate the dangers of using addictive substances, the storyboard of the design was designed by first studying the context of the stop-motion animation, in which a video is shot according to plan that is illustrated on a storyboard that communicates the sequence of events that take place to effectively allow the viewer to visually interact with.

Assignment 4: Racism awareness

To spread an awareness of togetherness abhorring racism an underlying reality in the society, students were asked that day to day objects to be used to express the social message through an abstract imagination.

As discussed in earlier Article 2 of the UDHR, the stop-motion animation tries to argue by displaying that a 3D animation style of animation can impart values to the young audience about the effects of discrimination very clearly

by revealing the non-regular shape also need acceptance in today's world. An attempt to use commonly available objects like sweets etc., as shown in figure 48 to educate those around about evils that we overlook, that can have an adverse effect on the world we live in.

The message was to effectively anti-racism awareness. The multimedia communications experience, in using creative imagination by using the sweets did bring in an element of curiosity in the viewers as well as the participants who got to consume the props while doing the given task. The main task was the synchronization of the props to the selected audio and to follow the plan through a story board that was designed after the group discussion in which all

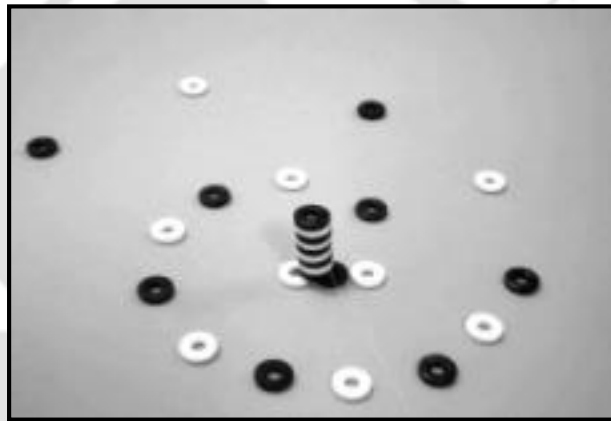


Figure 49: Racism awareness utilizing every-day objects to communicate

the participants interacted with each other to bring about the final design using a storyboard such that it can be effective in the communications experience, imaginative evaluation of the task; the story followed the KISS, principle such as to be easily comprehensible, a bunch of the toffees was colored black and the others remained their reflected color of white, figure 49. The interaction of a group of sweets was used such as to get the viewers attention such as to let the message reach its destination without too much noise as in the Shannon Weaver model of communication.

The students could visualize the designs before a creative solution based on the validation of concepts before the production upon the group discussions along with the peer groups inputs and suggestions that were deliberated and validated before the execution. The production was also uploaded to the web and thus students got their feedback as well as felt recognized as many people

can see and appreciate their work. Students slowly noticed to come up with many probable solutions of messages. They could clearly view abstract images of the theme.

Assignment 5: Saving the environment, by saving its animals – the Indian Rhino

The theme taken was to spread an awareness of the essence of animals in our society and our existence. Students were asked to use cut-out format of animation to evaluate the same using a different medium to experiment on the



Figure 50: Cut out animation to interact on the imagination of the communication.

Task, to study cut-out animation as a medium to get the same message across was done, the basics of the medium of cut-out animation, using paper cutouts experience in using a chart paper as the backdrop, the day and night were effectively communicated by physically moving the light source to allow the imagination to depict the imaginative interaction of night fall, figure 50. The communication gave a feel of the medium and its effectiveness to the students, who were taking regular feedback from their peers.

The students learned a technique of multi-media presentation in this to impart the training through first basic principles and then to proceed with the final production, the target students batch; it appears to be giving a free hand to exercise and simultaneously supplying the know-how of the technique that suits better.

Assignment 6: Awareness for the youngsters against abusive substance

A set of exercises were under taken to spread an awareness of the abusive substance. During this assignment, students used mannequins and special appearances with abstract attire to express specific to a target group as well as with common appeal.

The study was effectively allowing the students to come up with out of the box concepts for a given problem, when the feedback was taken from the peers, it

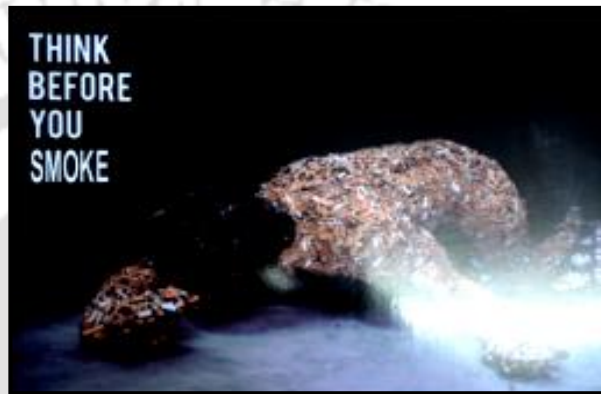


Figure 51 : Tobacco awareness with life size mannequins.

was found that there seemed to be a disconnect of the sense of the expression of the imaginative expression as the physical aspect was found to be missing by the peers.

The students discussed the need of the situation. It was observed that many students felt the need to consume harmful substances to disconnect from the actual factor of being invincible.

A technique of using an easily available material of straw was used to make human sized mannequins, in awkward positions to get the viewers' attention to communicate the message of harms of substance abuse. The technique used was to use a bamboo skeleton to serve as the base for the postures that were most appropriate in getting the attention of the viewer.

Two postures were identified as being the most effective from the feedback from the peers by enacting out the postures to the students who indulge in consuming tobacco and alcohol, the posture of smoker shown in figure 51 was made to represent a position on the ground head down giving a feeling of

submission to the substance and the drunkards position figure 52 was in the opposite direction with the head facing the sky giving the feel of a person intoxicated, the peers suggested to keep the postures awkwardly communicative to catch the attention of passers-by who can be drawn by the conceptual use of the mannequin, and gets the gist of the expression after reading the communication first”, Think before you smoke and Think before you drink” to young minds who could easily get motivated to indulge in the harmful activities.

Assignment 7: Abstract presentation

To have similar experience using a different medium to experiment on the effectiveness, a task to study photography as a medium to get the same message across was done, the basics of the medium of photography with an introduction to elements of photography, the medium of photography uses a product design for the communications experience, of the same interactive communication in the data collection utilization of multimedia and the subject using the equipment of the camera body & lens, filters, utilizing the theories of exposure depth , along with the effectiveness communications interactive experience utilizing the imaginative use of the mediums tools of shutter & exposure.

To bring in an effectiveness to the study of the techniques, in film processing



Figure52:Alcohol awareness with life size mannequins.

and printing of the captured data, the medium of close-up photography used to enhance the interactivity of the medium. To allow the students to use a communications experience, in using interactive communication through imaginative techniques with an introduction to product photography to help to use the medium to document the design in the necessary visualized format for better effectiveness which gets more emphasis due to the interactivity of the designer and the medium.

The three point lighting is effective in the use of key light to be used to communicate the interactive experience of the imagination to test out the various visualized concepts, like the use of fill light, darkroom techniques used to be using communication experience of the utility of imagination through interaction earlier, but with changing times the students feel the need for more interactivity taking lesser amount of time in a way to be more effective and which gave birth to a software revolution in photo imaging, more over this has now completely taken over the medium as the interactivity of the students with the medium happens in close to real time and there is less time wasted and more productivity happening from Guwahati to New York, a photo studio helps students to take back memories of the places visited by superimposing the students over the places of the students' choice.

The students were to identify an area to be utilized for the communications experience, of the use of communicative interaction. They identified the tobacco smoking to be an area in which effective communication using design can be used. They were given the task to interact with the medium of photography to effectively communicate a design. The students' communication experience in using the interaction with a medium: The medium of photography was used to effectively communicate, the message using models to effectively get the attention by over sizing the communications experience, in using imaginative compositions of a model of a cigarette stabbing 4 conceptual human statues allowing the imagination of the viewer to gather the interaction of the experience so as to be effective.

The students used their aesthetic and abstract skills of multimedia techniques of their own as they feel to use as the communication's interaction , that the

students knew as well as having had some experienced learners , as the earlier batch of students help. It was observed that they could produce excellence when peer group discuss and do assignments through a feed-back refinement. The communication of the multimedia promotional, starting with the text IIT Guwahati followed by its annual cultural snap shots of images and moving images in video and animated forms to give an interactive communicative visual flavor of the event having an identity of a human form with raised hands as displayed in figure 53 (Alcheringa, 2013).

The effective multimedia communication of the interactive promotional start with the text IIT Guwahati presents followed by its annual cultural extravaganza followed by static visuals of the communications imagination as



Figure 53 : The graphic symbol of Alcheringa that bring enjoyment to the students presents.

well as conceptual formats of the event in 2013 trip in a psychedelic universe a distant music, some rhythmic steps,” the theatre calls you to come and color the designs of the abstraction etc.”, along with the individual events to motivate the viewer to be a part of the event i.e., using words to allow the viewer to imagination, arbitration, conceptual message effectively.

The use of various elements of design from CG (Computer Graphics) to video footage along with text to form an amalgamation of visuals to assist the viewer in feeling the interaction visually. The story is of a family of erasers who live

in harmony, a sun is sketched out and colored, a water body is drawn and story of the fishes play in them.

A permanent marker family attacks the eraser family and destroys them, the eraser family uses a Whitener to allow the eraser family to retrieve the wounded and repair them to be agile again, figure 54. The message to the

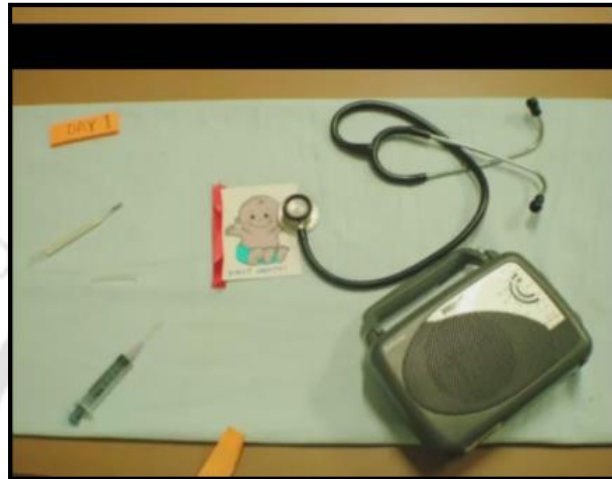


Figure 54: A non-violence awareness campaign

viewer was using every-day objects using a Whitener, but does not address the violence depicted in the medium. There could have been the use of text to emphasize the effectiveness of the emphasis of the abstract communications experience, using the interaction of the imagination with the perceived actuality, in a conceptual sequence for the viewer to get a better understanding.

Assignment 8: Animation and Character

Its experience, in aesthetic imagination can be effectively communicated for students, as it can help in the students thinking out of the box as was evident, by students who used a different medium from the one used to effectively use in a 3D animation to allow the interaction to be effective due to the experience in the method of using the imagination and story, story-board of being devastated and dejected innovation of the software to make the

communication effective as displayed in the character “Lumoth” thinking, figure 55-58, of a way to get through the light source.

Its actuality can be effective for students, as it can help the students in thinking creatively, as was evident by students who used 3D animation to effectively allow the interaction to be useful due to the communications abstract experience and interactive method of using software to make the communication effective.

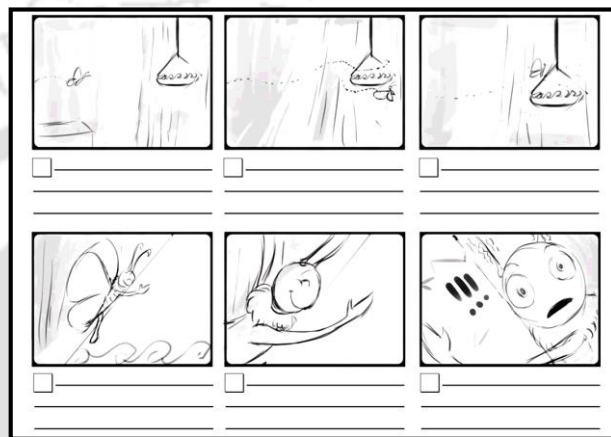


Figure 55: Lumoth on a story board sequence of events of the first part of the story story-board of being devastated and dejected.

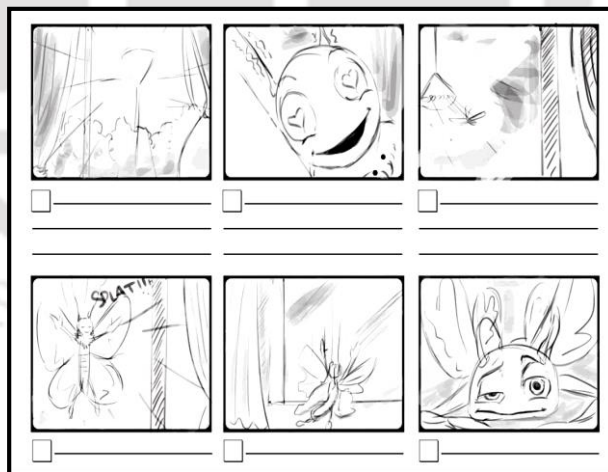


Figure 56: Lumoth in the sequence of events of the concluding on the story.



Figure 57: Lumoth in 3D animation shown to be patiently awaiting for the lost love.

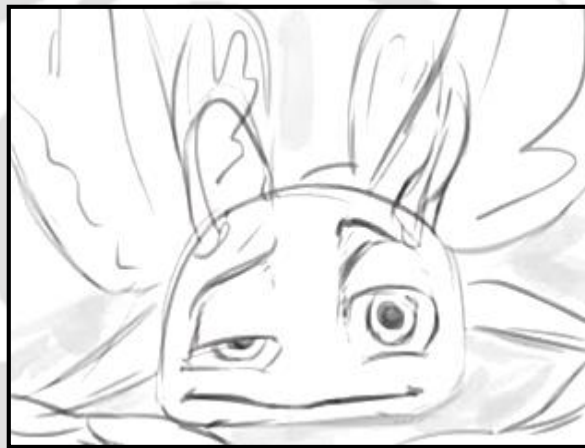


Figure 58: Lumoth in 2D animation shown to be totally dejected.

The story of a Moth, “Lumoth” was effectively communicated by students by initiating , the communications experience in visualizing the design in mind and replication using the interactive imagination, communicating using the hand render technique on a sheet of paper story board and then the story board, figure 55-56, to use the experience in an imaginative method to add effective multimedia communication of the story.

A study of the student experience in interactive multimedia by mediums one is with to design effectively i.e., in a given timeframe, the students used the techniques acquired in the mediums of visual communication, product design in developing tested a software model of the visualized character and making it interact with the story to effectively communicate..

The story board is effective for the students to design according to the plan, the colors were chosen to effectively allow the viewer to interact with the medium i.e. character animation to show the interaction that the Moth goes through in the emotional drama with self, but compromises by settling for a lamp instead in a way trying to give the viewer the visualization of the Moth - Lumoth in the attempt to reach the Moon the message of 'try higher' but not to be demoralized when one fails, but to adapt as per the situation. The story of Lumoth shown in the sequence of events on a story board in figure 55 and figure 56 with the mention of the last frame of the story, using the abstraction in an aesthetics way, by allowing the viewer to have a feel of the situation that Lumoth is in, and also emphasizing on the final situation

Assignment 9: Experience of hand rendering

The technique of hand rendering used effectively, by utilizing the final frame of the hand render used to design a moving visual. The frames hand rendered used to design a moving visual through a stop-motion animation frames as emphasized in figures 59 and 60 showing the abstraction to display the aesthetics in the design. Student learnt the fineness of hand skill to express imaginative beauty.

Assignment 10: Abstract simulation exercises in presentation

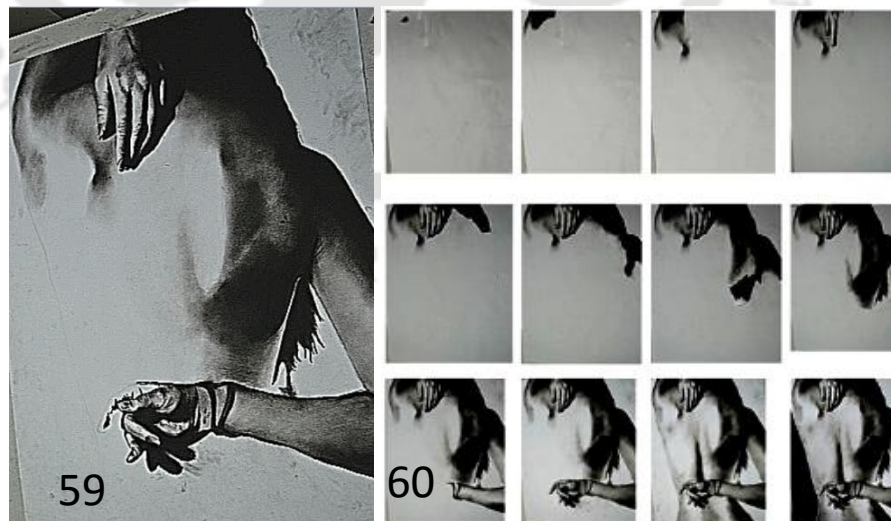


Figure 59, 60: The hand rendered aesthetic and abstract visualization in 2 formats, a static and the other dynamic using the static frames in series.

Students used an age old technique to bring the behind the scene technique forward, such that it can be useful for novice students to adopt the technique after the discussions from their peers. The study in the domain of effective multimedia communication design was undertaken to understand the students' perspective in the communications experience of the case studies.

The objective was to allow the students' imagination to be enriched with the effective multimedia communications in multiple areas such as to provide an experience, through interactive imagination, from the various mediums of communication wide area for the students to explore so as to get the communications.

The effectiveness of the communication is the characters interaction with the surroundings in effectively to communicate the final message. The outcome of the students' communications experience, in utilizing interactive



Figure 61: Veeru furiously watching Gabbar harass his beloved Basanti.

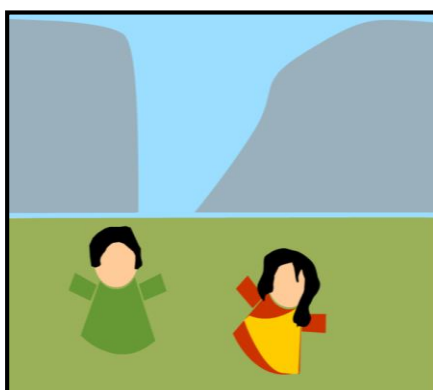


Figure 62: Puppetry inspired communication Gabbar Singh harassing the captured Basanti

communication along with the deliberations with their peer groups in their assignments through a feedback refinement unfinished phenomenon, shall be discussed in the next chapter.

This again communicated that the students were able to imaginatively come forward with effective multimedia communication by putting together a spoof on a famous Hindi movie 'Sholay', the students put together their ideas and came up with the method of the imaginative communicative forms of

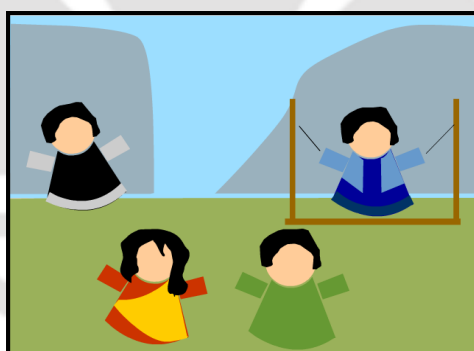


Figure 63: Jai make his entry to ease the situation

animation, puppetry using dolls to enact out a short sequence of the film in which the heroine, Basanti played the role played by the star of the era Hema Malini, captured by the dacoit Gabbar Singh, the name Gabbar Singh had become legendary over time, that was played by a star negative character of the era Amjad Khan, who uses Basanti as a bait plans to tie up Veeru played by Dharmendra to posts and refuses to reveal the whereabouts of his friend Jai played by Amitabh Bachan using the students perspective of the communication using abstraction of reiterating a communication from a

puppetry inspired medium to a newer medium of software using Flash to modify the communication after peer feedback of stop motion animation in depicting the sequence and taking regular feedbacks of their peer groups who gave the inputs of it being displayed through an effective multimedia communication of animation. The students used their limited knowledge of software along with the inputs of the peer group came up with a short film of the part.

The study gave the students an avenue through which they effectively communicated their message to viewer of their experience using the medium of puppetry to enact out an interactive communication using its experience to open up the students minds to better innovative solutions by utilizing a software to use their experiences after taking the necessary feedback from their peers to design a short film that could utilize the arbitrations of the members of the group through an interactive storyline of the communicative sequence that brought the actors to star status after their performance in the film.

3.6 Abstract visualization

It assists for the students to imagine or think out of the box innovatively, this assists in bringing forward the new areas which may not have been thought of before. To enable the thought process it is necessary for the students to think creatively for which an interactive environment needs to be utilized for the students to visualize. Many a time there is a disconnect with the visualization but at a later stage it can be effective, an imaginative visualization assist in the communications to become effective just as was visualized to imagine the interactive communicative need of a primitive man, while the visualization could imagine a remote controlled television set when sitting idle. It was effective as the students got a feel of the experience that could allow the imaginative visualization to become an effective design. The students also tried out effective communication methods to design for contexts; it has been discussed in the next section.

Theories in the theoretical model, phases and quantitative or qualitative techniques of the study standard, were utilized to comprehend the aesthetic as well as the abstract imagination of the students to design. The effective practices were observed and utilized to the required contexts, this was done such as the area of hand sketching (free hand as well as constrained) (2 groups results) creative ideation using techniques of communication - still images and moving images (2 groups results).

The outcome of the students' communication in using the experience, in imaginative and innovative along with the discussions with their peer groups in their assignments through a feed-back refinement unfinished phenomenon, shall be discussed in the next chapter.

3.7 Conclusion: exercise out-come

The chapter arbitrated the students' perspective in the communications experience in the communicative interaction of the mediums of communication so as to get the perspective of the communications interaction experience. The arbitration interacted with the maximum and minimum effective multimedia communications to analyze the communications interactive experience values of the interactivity of the mediums that is crucial. The measurement of the values of the communications experience that are consistent with the medium imaginative and innovative of interest under consideration plays an important part in the study. To evaluate the effectiveness of the communications experience, of the interactive communicative data towards attaining the goal. The categorization of the data using the sorting techniques as available in MS Excel or similar programs.

This search was focused on collecting data from the multiple sources, i.e., internet, books, DVDs, CDs, of published public content. The focus was on videos, animations, and related mediums, the outcome was peculiar as there seemed to be a strong effectiveness of visual culture, the effectiveness of design and lack of visualization, in the effectiveness in students, designs in the usage of cartoon characters, the software knowledge rating of students; design principles knowledge rating of students; students comprehension in

effectiveness of design task; students necessary literature knowledge rating; the students medium of material knowledge rating, students knowledge of clarity; students knowledge of final design interaction with software; students average knowledge clarity of design as well as a non-participant observation of students knowledge of the interaction with the software; students clarity of design task; students necessary literature knowledge survey; students knowledge of acceptability of medium survey; students knowledge of time taken for output survey.

A majority of the students had adequate awareness of the mediums of communication as well as the visualized end result, with a sound clarity of the task, good knowledge of the interaction of the design task. From the data survey of the results from the various mediums of communication for their effectiveness of the students' interactivity, it was observed that a majority of the students utilized mediums that had more interactivity.

Similar to the design of 3D design in which the interaction of the students with the software happens after a careful study of the physical prototype made in using the materials of Clay, Polystyrene, Wood as well as every-day objects to make them interact with the design such that the students interactive imagination along with interactive practicality of the materials with respect to the time taken to do the task along with its effectiveness.

This type of data collection evaluation is widely used in the qualitative study framework which is a typically used technique in multimedia like particularly cultural science of humans and their works. This may not be used as much in the science or study of the beginning, progress, structuring, arrangement, and process of the society we live in, that uses the various guidelines used in the study of interaction, community and behavior, whose goal is to effectively interact with the various beliefs of the students and their activities of interaction.

The study was conducted using the concepts to derive a solution from students' perspective of the communications experiences such that it can be aesthetically imagined to be interactive. This could bring out results more effectively as was evident from the ease of the use of stop-motion animation.

This was due to its ease of use and interactive mode of the design process of the design of the experiments in analyzing the multimedia communication of the story being narrated and simultaneously allowing the students to interact with the story line.

The story line could be modified if needed so as to produce excellence of assignments when peer group discusses and do it through a feedback refinement unfinished phenomenon. The study was used for effective multimedia communication to interactively communicate a design using a multimedia design for a conference. The paper was to understand the students' interaction from the communications experience in using interactive communication in the medium of text, effective medium to use the art or process of printing with type to highlight its sensitivity and fineness in media television as typography in motion.

The keywords for the study were interactive, animation, character. Interaction design seems to be aimed at fulfilling the requirements and needs of the students of the result. With a fast-paced needs of the students, the mediums of the delivery of the solutions for the students' needs seem to be going towards a more interactive to satisfy the students for the immediate need but might be missing on its repercussions if care is not taken on the multimedia content communication that interacts with the students.

The students seem to be following the means to use these means and methods to an education environment to interact in the 2D or 3D mediums of communication. Interactive multimedia can be an effective medium of communication for design be it in a 2 D or 3 D, the effects of character animation to the context of a simple story can enhance the understanding of the students intent to communicate with text.

The importance of visual culture in the study of one of the mediums of multimedia communication - animation will be studied for its Interaction to effectively communicate the desired message to the target audience. This study will be analyzed quantitatively and qualitatively to get the results in using a digitized Cel-Animation technique aesthetically to communicate an imaginative message effectively.

Chapter 4: Media presentation effectiveness and further look into design newness and abstraction in presentation

The chapter analyzes the interactive imagination presentation of theme in search of effectiveness communication, taking surveys and setting up experiments to explore the imaginative, arbitrary and conceptual nature of the designs to evaluate the media presentation effectiveness and further look into design.



4.1 Introduction

A student can easily interact with a medium. For this, the student needs to understand the effective techniques to visualize the interactive communications experience first and interpret it through an experimental interactive multimedia communication into its fundamentals such as to fit into a design. Every medium has a basic knowledge on which it is structured on. This knowledge can be transferred through the easily interpreted mediums that have maximum interaction. This interaction can measure the effectiveness of the medium. The students are designers as mentioned by Norman Potter. Every human being is a designer in the book 'Introduction to Graphic Design Methodologies and processes understanding theory and application' just that they need to believe they can design.

This in other words can be interpreted as an interaction, the chosen student groups which are unique due to their ability to qualify one of the most competitive tests in the country, but to design, the students need either to have an inborn talent or acquired skills to effectively design. A designer designs for an engineer who develops problem solving machinery, techniques that a scientist invents to allow it to see the light of the day.

A student's aspiration in design is to have the minimum noise in the Shannon weaver model of communication. Here, the sender sends a message through a transmission medium that can distort the message before it reaches the receiver who eventually gives the feedback that can still be effective in getting the task done. The actual need of the students is to reduce the noise level such that, the interaction can be most effective using multiple mediums of communication that can be interacted with such that the communication can be seamless.

A student understands the given context and accordingly interacts with the multiple mediums to tweak the effectiveness such as to satisfy the content and its utility through the interactive methods of design.

The process of summarizing the data from the contingency table or the cross tabulation helps to ascertain the lacunae in the mediums and helps to rectify the elements to make it more effective.

4.3 Objectives

This portion is devoted to look into how a free hand in thinking leads to a cohesive newness and abstraction in students' learning through assignment presentations using various expressions such as using imaginative communicative solutions -Hand Rendering, Photography, Stop-motion filming and hand rendered creative aesthetic, abstract design a self expression

4.3 Exercises

Exercises that communicates self-expression without multi-frame story telling.

A. Creative anti-smoking

Smoking is injurious to health, there are statutory warning imprinted/ illustrated on tobacco related products and packages and caution lines display during smoking related scene in TV programmes and cinema. Some of the awareness films show ill images of human as a result of smoking etc., found during a student discussion may not serve as universal appeal. The poor and those who are suffering, they do not have any hope of being cured if something happens to them.

Composition 1: The usage of pragmatic imaginative communication to use the abstraction aesthetically to a given context, that were chosen by the students themselves. Some chose substance abuse, climate change etc. Students have come up with a concept of displaying complete burnt cigarette ash, figure 64.

From the realistic imaginative communicative solutions in the use of the medium of photographic communication, it was observed that the effectiveness of the design would not have been so effective if the medium would have been a complete video or a complete photographic as evident from the students' preference of the photographs based upon the, imaginative

arbitrary abstractness of the photograph. As shown in Figure 64 the effectiveness was in the imaginative representation of the photographic frame, that captured the gist of the context in allowing the viewer to appreciate the aesthetics in the composition, as well as to depict the dark side of the habit.



Figure 64: Communication capturing the conceptual ash on the tip of the cigarette.

Composition 2: The students were given the theory of photography and the image capturing techniques in analogue as well as the digital techniques and given an experimental task to initially identify an area that the medium can be effective in. As was observed from in which the realities in imagination was depicted by the use of one mentholated cigarette, represented by the placement



Figure 65: Speculative arrangement in the communication of racism and handicap.

of the White filtered cigarette in the figure 65, the student has tried to use an experimental method of depicting racism through an anti-smoking campaign.



Figure 66: Composition of a tobacco pipe in the centre of the cigarettes.



Figure 67: The photographic use of the smokes wisp emitting from the nostrils.

The students' interaction of using another medium of communication i.e., the textual medium to bring the students attention to a focused area would have been effective. In the photograph, the students have used four products of mass destruction to highlight the discrimination among objects too, i.e., one White filtered cigarettes among three brown filtered ones in figure 65. The effectiveness of the composition of the design was important as careful experimentation on the placement of the props was crucial, with the rule of the third playing an important part in the composition, the lighting helps in the effectiveness of the interaction of the designer and the viewer in the design.

Composition 3: In the frame of the photograph, the students have tried to communicate the interaction of the cancer sticks as termed by Muñoz (Atkins, 2013) along with the tobacco pipe in figure 66. The design in the figure can be imaginatively

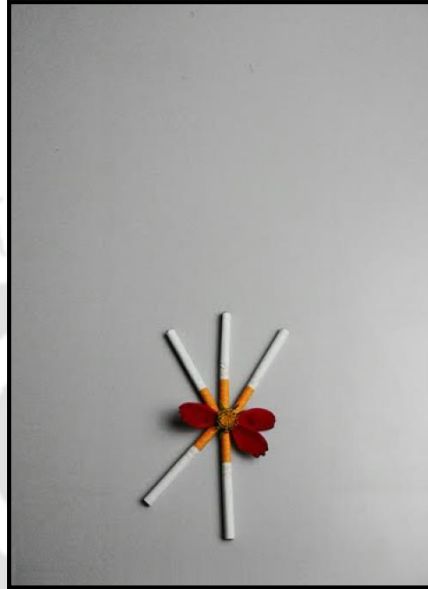


Figure 68: Composition- the petals to attract attention of the tobacco pipe in the figure.

inferred in many different effective ways, but the effectiveness can be easily measured by the addition of the medium of text or icons such as to throw some light on the design in different effective ways.

Composition 4: A silhouette of a human figure emitting smoke through the nostrils in the picture displayed in figure 67 allowing the viewer to use their knowledge of aesthetic abstraction. From the interaction the image communicates to emphasize the abstraction of the mood of the effect on the person indulging in the activity i.e., smoking.

From the composition it seems to be urging the viewer to get the experience in the photograph. This could be due to the smoke emitting in its composition giving it an abstract prudent sinister feel, allowing the viewer to feel the aesthetic effect from the photographic medium of communication.

Composition 5: The composition of 5 cigarettes along with 3 Red petals, in figure 68 to symbolize a simplicity of a handicap represented by using 2 of the cancer sticks in the lower half along with only one petal on the left side of the

composition. This as depicted by the students' abstract imaginary arbitration after getting inputs from the peers, that is conceptual in the use of the composition to make the missing props draw attention of the viewer such as to make it more effective.

The students were to identify an area to be utilized for the reality in its experience, of imaginative interaction of the communication. The students identified the tobacco smoking to be an area in which effective communication using design can be used. The students were given the task to interact with the medium of photography to effectively communicate a design. The students' reality in its experience and interactive imagination communicated with a medium.

To present a message effectively using specifically created models and their abstract compositions through photography like cigarette stabbing four human like statues, allowing the imagination of the viewer for a positive information about life. Students thus with their free imagination and innovative way of presentation can produce excellence when peer group discuss and do assignments through a feed-back mechanism.

B. Exercises on elements of composition and information communication.

Concept 1: The photograph of a pan on the fire cooking gives the viewer to imagine about the photograph in Figure 69 of if it is of a cooking process about to start or at the end of the process, the visual clues act as the abstraction of the activity, to assist the viewer to imagine abstractly to communicate, there seems to be the need of some more visual clues for it to be effective.

The visual of the sky and the electric power towers seem to be communicating, the aesthetics in the composition as the abstraction of the experience shows, either the Sun rise or Sun set as represented in figure 70. It is essential for a designer to use additional clues such that it can be concepts to design effectively communicative, where peer groups are essential for the students to refine their concepts to design effectively.



Figure 69: Flames engulfing a pan interaction of the colors of the flame



Figure 70: A feel of the phases of the dawn or dusk.

The cliché of many photographs a Sun rise or a Sun set to express the aesthetic abstraction of the picture in the visualization from behind the lens to communicate a message through the medium of photography. The photograph is of a frame in time in a person's life taken to capture the moment of the context in which the students finds themselves in often, trying to make sense out of the arbitrary abstractness of the situation.

Concept 2: The photograph of dry trees seems to be hinting, at the abstraction of the climate change. The swaying of the trees in figure 71 seems to give the



Figure 71: The feel of the seasonal climate change in nature.

viewer a feel of the seasonal climate change in nature feeling of a gust of wind, or cloudy day which can make it effective only when put to a context such as to give a feel of its imaginative communication.

Concept 3: The photograph of a wine glass filled with a colorless fluid as in Figure 72 has been given illumination from the top can allow the viewer to imagine the arbitrary of the conceptual use of drops of Blue color on the liquid, that has been captured just after the liquid has been dropped in it .The design could have been effective if the abstraction of the photograph could have had additional data to support it, such as the use of a comment to effectively use the medium to get a real feel of the experience.

Concept 4: The photograph of 3 ice cubes on a reflective surface, figure 73, bring forward the abstraction in its experience with the abstract feel of the photograph in Figure 73 to effectively give the feeling of the experience of seeming to have been taken just after it has been placed, due to the lack of molten water on the surface. The effectiveness of the photograph to communicate can be enhanced by the addition of a medium to support the present content.

Concept 5: The photograph of one side of a path, figure 74, seems to effectively communicate the depth of field of the frame, three bricks have different depth of field so as to get the photograph to have the effectiveness of the medium for the aesthetic abstraction of experience for the students to utilize imagination, arbitrary as well as the visualization in the composition of the frame before the click, this is possible when the results are discussed with the peer groups to get the feed-back so as to refine the unfinished phenomenon to design effectively.

Concept 6: The photograph has the ability for science, art and practice of designing durable images by capturing light as an electromagnetic radiation, the student-has used the imagination, arbitrariness and abstractness to deduce the earthen lamps drying in the open seem to await the festival of lights for it to be lit and used as a decorative element. The lamps have been captured in an array that could be abstraction of being left alone to dry up and be ready to be lit for the students to celebrate their experience of the festival of lights,

figure 75. The shutter to control the exposure of the imagined picture etc., to assist the students to have feel of the experience of the abstraction of having to take the photograph that can be judged of the imagination, arbitrariness and abstractness of the design.

In photography the effectiveness of the White balance plays an important role which can be gained by using the light conditions to ensure the natural light on the imaging chip to get the colors in the frame to appear natural, it helps in registering the natural coloration of the image to get the experience of the imaginative visualization of the interaction along with the inputs from their peer groups.

The use of the technical specifications of the film speed, used practically as an indication of the speed of the film, the students effectively ensured the amount of light essential for it to control the automatic exposure, taking the technicalities of higher the film speed the more is the sensitivity and lower the film speed lesser is the sensitivity, a combination of film speed, aperture, shutter speed effectively allows the correct experience from the aesthetic abstraction of the imagination, arbitrary, abstract expression of the design task. To understand the effectiveness, of a communication for its interaction in the evaluation from the students' perspective, in using different mediums, as well as the abstraction of a task to use photography as a medium to get the same message across was done.



Figure 72: A wine glass with drops of Blue colored substance

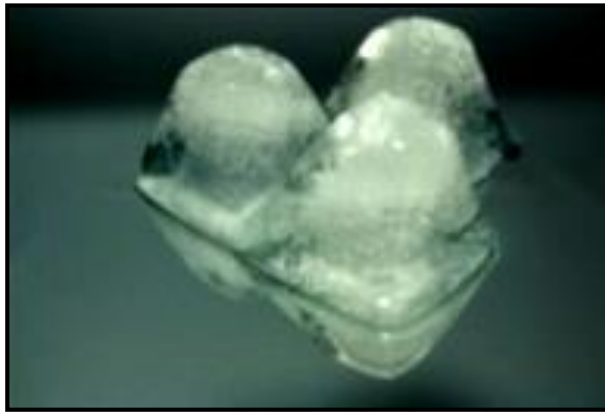


Figure 73: Three cubes of ice on a reflective surface



Figure 74: Bricks on the side of a road .



Figure 75: Earthen lamps awaiting their time to be lit up.

The basics of the medium of photography with an introduction to elements of photography, the medium of photography uses a product design for the abstract imaginative communicative feel of the experience data collection with

the use of media and the subject using the equipment of the camera body & lens, filters, utilizing the theories of exposure depth of, along with the effectiveness of the abstraction in its experience, interactive imagination, for the use of the shutter and exposure.

The study of the techniques in film processing and printing of the captured data. The effectiveness of close-up photography used to enhance the interactivity of the medium. This was done by allowing the students to use an abstraction in the communication of the multiple mediums, for their experience in interactive imaginary technique with an introduction to product photography to help to use the medium to document the design in the necessary visualized format for better effectiveness which gets more emphasis of aesthetics and abstractness due to the interactivity of the designer with the medium of communication.

The effectiveness of the three point lighting used to provide a key light to be used abstraction of its experience, of imagination interaction to test out the various visualized concepts, like the use of fill light, darkroom techniques used to be abstract in its experience, interaction in their imagination, communicated earlier but with changing times the students feel the need for more interactivity taking lesser amount of time in a way to be more effective and which gave birth to a software revolution in photo imaging, which has now completely taken over the medium as the interactivity of the students with the medium happens in close to real time and there is less time wasted and more productivity happening. Variations of framing and composition (plays an important part in the effectiveness of the interactivity of a photograph).

The theories of sensitometry (Salvaggio, 2013) and densitometry (Marin, 2014) get used by the students while they experience, aesthetics in their imagination, arbitrary abstraction process of evaluation of the subjects interactivity. With an introduction to digital photography the interactivity becomes more effective while losing out on the interactive learning of the medium due to the short cut method of capturing the essence of the subject but not getting a feel of the post production of having to manually interact with the mediums of photo paper and the feel of the chemicals while developing the

photograph, from its experience, of interactive imagination communication of the students with the medium of the camera with respect to the shutter speed, light conditions, film speed, lens etc., which becomes effective for the final design, with the use of the interaction with effective studies in the medium of photography.

The students were to identify an area to be utilized for the abstraction in its experience, of imaginative interaction of the communication that the students identified the tobacco smoking to be an area in which effective



Figure 76: Four sponge balls having a smile.

communication using design can be used. The students were given the task to interact with the medium of photography to effectively communicate a design, the students' abstraction in its experience and communicated through a medium.

Concept 7: The students were given the freedom to interact with the medium and capture data from the surroundings such that they could connect with them such as a set of 4 sponge balls with a smiley on them, as shown in Figure 76, to probably allow the viewer to get the feel of the essence of the medium.

The students could feel the effectiveness of the medium as the interaction brought forward the imaginative effect of the visualized idea to design according to it to make it an effective multimedia communication.

The abstraction generated by the expressions of the students of their innovative aesthetic imagination, in the depiction of a scene from a discussion

of the peers to depict their own feeling. The medium of photography assisted the viewer to get the feed-back to arbitrate the design.

Concept 8: The photograph in Figure 77 of a White flower, on the ground seems to be trying to communicate the essence of the students' visualization in



Figure 77: A White flower enhancing aesthetic with its loneliness .

capturing the expression rather than the connotations it might apply to. The students had left the design plain and simple without interfering with its interaction with the viewer, left to comprehend it the way it would be most effective, such as the use of the medium of text to effectively communicate an additional message.

Concept 9: The photograph of spools of ribbons in the colors of Green and Orange along with the other elements in the photograph figure 78 in a way

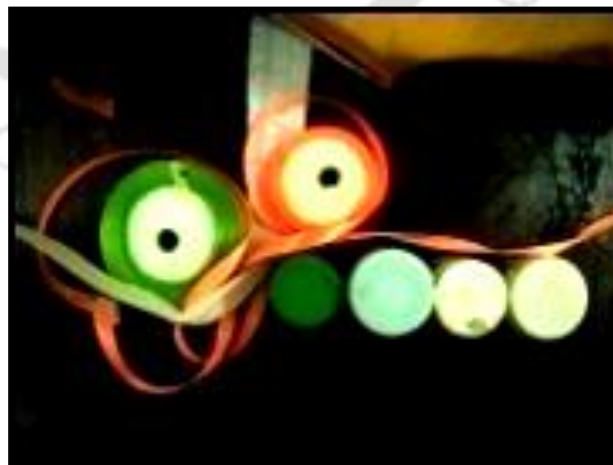


Figure 78: Colored ribbons giving the impression awaiting their turn to be used

assisting the viewer to get the expression to allow aesthetic imagination of the innovative arrangement of spools of ribbons awaiting their turn to be used.

Concept 10: The medium of photography assists effectively, as in the photograph of ice cubes on a light as shown in Figure 79 shaded base used to be effective in the viewer to see the abstraction of the scene, ice cubes on a surface giving the viewer an imagination of the aesthetics in the abstraction of the scene, of a physical object gives an illusion of its presence but over time



Figure 79: Ice cubes on a surface aesthetics in the abstraction of the scene.

with its respect to the surrounding loses its interactive value to an imaginative communication form of its original form of water, just like an idea takes shape with a fluidic shape of flowing in any direction shown, changing its form to the context of the situation and attaining its original form when its effectiveness is diminished.

Concept 11: In the photograph in figure 80 the rule of the third has been used to allow the viewer to get the imaginative communication of the yellow tinge



Figure 80: A sports field: Photographic medium to communicate scene of the light and the architecture .

of the morning sun shot from behind a net, probably a football field, figure 80, to give the communications interactive experience of the feel of an early morning from a sports field.

The photograph of the aesthetics of communications moment in time to capture the scene of the light and the architecture giving the viewer of aesthetics in which the communications abstractness can surpass communication in which at times difficult to imagine, the medium plays a

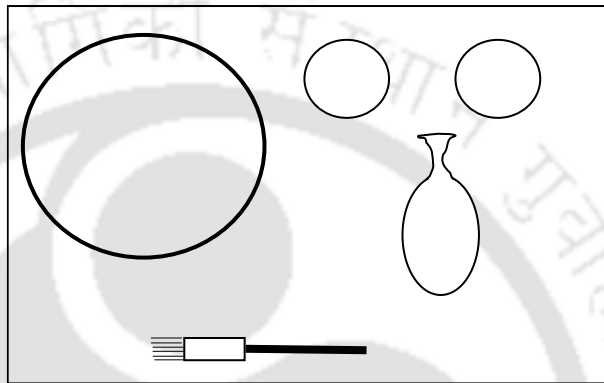


Figure 81: Mask making essential tools

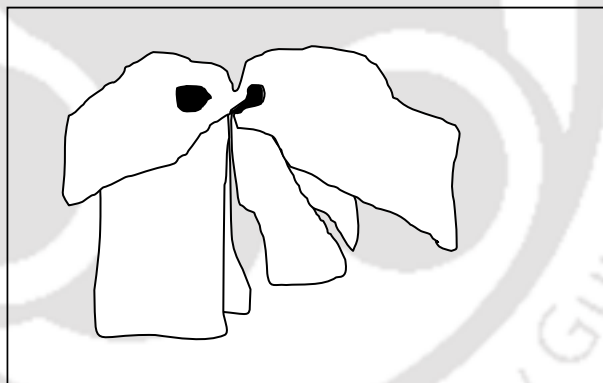


Figure 82: Tearing of the paper into long strips

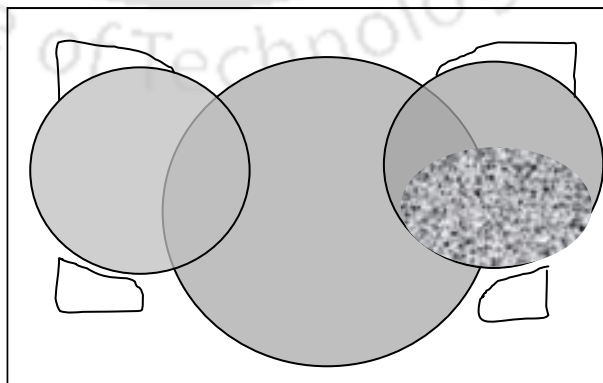


Figure 83: Mixing the adhesive necessary to paste the paper strips on the balloon

crucial role for the effectiveness, that gets good feedback from the peers as

well to be used to depict the man made structure communicate effectively along with the candid photograph of a set of footsteps of a girl child that becomes effective to communicate a message, to get the expression to portray their imagination of the medium of photography assists in bringing the interaction in the communication from the surroundings to get the students to communicate effectively.

Concept 12: To test out the communications experience, in creative use of from a medium in which there is a hands on experience of using a medium of communication that today has made it effective to hide the technical details using interface design in which the students were given the option to interact

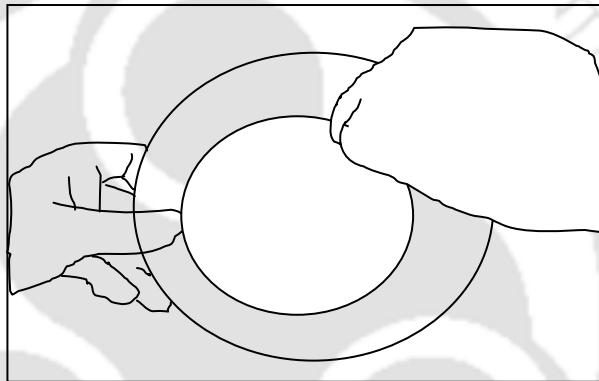


Figure 84: Adhesive paste made ready to be applied over the balloon

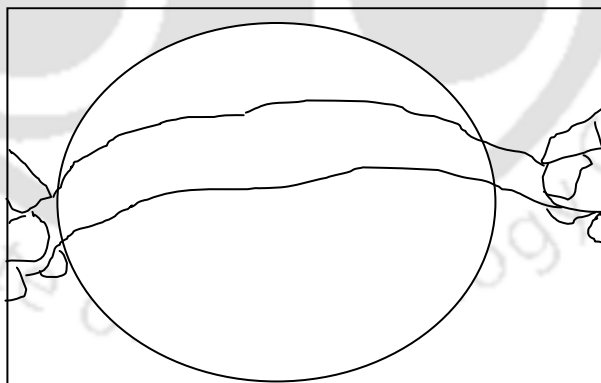


Figure 85: Strips of paper being applied over the balloon

with the live experience of an imagination that can also allow an abstract input to be utilized to bring about an effective design as was realized with the experience from photography along with the inputs from peers who could easily give their feedback from the multiple mediums of interaction available today such as Whatsapp, Face book, Twiter etc., that bring forward the probe

of the communication expression while communicating using one's own imagination, creatively that could have taken a longer time to interact just a few years back, while in the present time it is instantaneous for students to express their own imagination, in aesthetic, abstract form get instant feedbacks from peers such as to excel in design in a more creative way than before, but with caution due to the intolerance of a few of the viewers who could react in different unpleasant ways.

To test out the students' imagination, innovation in the communicative design sensitivity a task to create design using a piece of paper mache, to enable the students to explore their experience, of its usage creatively through a medium of face masks to allow them to prepare the paper mache made by, clearing an area as it can get messed up. The use of newspapers can be useful, a container, flour, wallpaper powder, or White glue, Water, a base structure to rest the design on, paint brush.

The newspapers were torn into long strips, of about one inch broad; each design requires different shapes and sizes. Scissors were not used due to the inputs of the peers, it was advised a torn edge blends better than a cut edge. There should be no wrong sized strips. Volume to the structure is added by molding the strips, and by using different sized strips. In choosing a method to make paper mache using a few slight variations will result in the same product. An adhesive mixture is prepared by pouring two parts white glue and one part water into a mixing bowl, figure 84. These quantities can be changed to suit the size of the need. It needs to be mixed properly, using a paintbrush, a mixing spoon or mixing stick. The mixture has to be of smooth consistency. A hard surface is used for the papier-mâché. The experience can include a balloon, figure 85, cardboard or a molded figure. In addition, papier-mâché can be made from two objects together to form a creation. If using a balloon, can be painted on it with cooking oil beforehand as, when dry, it can be slid out easily.

Creating the paper mache by dipping a strip of newspaper into the mixture is easy to make, rigid material used to cover surfaces, the excess mixture can be taken out, by slightly sliding fingers from the top to the bottom of the strip of

paper. To be held over the bowl so it drips back into the container. The strip over the surface or figure, it needs to be smoothed out, using either your fingers or a paintbrush. Be sure to get as many of the creases and bumps out as you can. With the aim to get a very smooth surface for its painting and decorating, to create a shape (as a face), bunch the strip into the facial form, place it on the facial surface, and then add a strip on top to smoothen it out. This can create volume, texture, and details quite easily. The process is repeated in laying strips; it is done till the entire surface i.e., shape is covered around three times.

This is essential for the base because when it becomes dry, it needs to be strong and stable. The first layer needs to be out laid horizontally, the second vertically, and so forth. It will help in showing, where you have been before and strengthen the piece. The object can be placed on a covered surface to dry. It will need a day or so to completely dry, depending on the size of the piece. It should be left untouched until next day, then to check if it is ready for painting. The coloring, painting or decorate as desired can be started; the peers advised to start with a White primer. If using a light color on the piece, it may use this method (otherwise some print may stick out). The top part does not need to be covered, as the balloon needs to be taken out.

To enable the students to explore their abstract realities in its experience of using aesthetics through a medium of face masks to allow them the explorative process of having to re-invent themselves to bring out the face masks to address multimedia communication to design creativity effectively.

The communications experience to use their individual as well as the use of peer inputs effectively communicate using a product design in the physical mask, using abstraction in the use of colors to come out with effective colored masks such as key words of alter ego, Tantrik in a trance, colorful joy, devil, psychedelic etc., as represented in the examples given.

The students' communications experience, in imaginative representation of interaction of mediums to a given context to evaluate its effectiveness was evaluated by giving communications experience, imaginative interactive task of having to design for the kind of ranges or the types or styles of Animation

techniques that one can use with each different mediums to effectively design traditional animation practices where each frame is drawn using a technique of multimedia, every design was effective due to their multimedia appeal.

Task analysis was based upon creativity and technique. It was observed that a majority of the students had a very good creativity and a very good technique with respect to hand sketching.

It was observed that in the design semantic pragmatic interaction of the students' effective communication of the medium of mask making, figure 86-90, for students to communicate the design semantics with respect to their Interactive

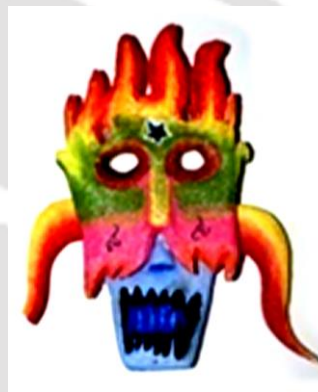


Figure 86: A mask having the aesthetics appeal in depicting abstraction expression through a different culture – Viking

experience and cognition was such that a majority of the students could confidently interact their experience. With respect to the pragmatic nature of the designs, an acceptable portion of the students could get a pragmatic feel from their experience. The practicality includes having to test the foundations from the introduction of the basics of the animation design, production, and



Figure 87: A mask having the aesthetics appeal in depicting abstraction expression through a different theme – Alter ego

scriptwriting along with the importance of the effectiveness of visual culture in the study of animation. This could be due to the reason of having to perform additional number of pragmatic than just choosing visually, the students had to interact based upon the understanding of production and scriptwriting for animation.

The communications experience helped in understanding the students' capability in multimedia communication of design, first to interact with the

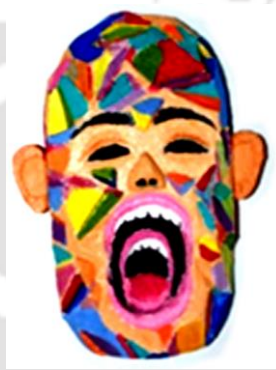


Figure 88: A mask having the aesthetics appeal in depicting abstraction expression through an abstraction of an expression of shouting.

medium as in learning by doing rather than studying the medium. To understand the students' pragmatic of interaction of mediums to a given context to evaluate its effectiveness was evaluated by giving an pragmatic task of having to design for the kind of ranges or the types or styles of animation techniques that you can use with each different mediums to effectively design traditional animation practices where each frame is drawn by hand and their importance and relation to contemporary animation techniques such as stop motion animation technique, flip book, cutout animation, 3D animation.

From the examples analyzed to effectively communicate the essence through a campaign for a Green campus, was effective as a majority of the students using their creativity of thinking out of the box and bringing out concepts due to the motivation of having to interact for a cause campaign for a Green campus. The pragmatic also brought forward the students who could not come up with creative concepts i.e., very few of them needed more interaction for them to design better.

An imaginative representative method to evaluate the inferences of the introduction to specialized areas in multimedia such as light effects, cel-animation, character animation etc.



Figure 89: A mask having the aesthetics appeal in depicting abstraction expression of a psychedelic expression.

How can multimedia be effective in spreading an awareness of harms of the use of carcinogens such as tobacco and how can the design effectively communicate it to the viewer? A majority of the students who could bring out concepts that were effective while there were still some who could not do so, due to the lack of visualization. This can be corrected with interactive multimedia to increase its effectiveness.

Concept 13: An effective multimedia communication interaction to evaluate the collective inventiveness of the students in applying communications experience in interactive communication in technology to the imaginative



Figure 90: A mask having the aesthetics appeal in depicting abstraction expression through a different theme Tantric.

capability of designing a character as had been done earlier with Fido Dido or Baiti, figure 91. The students were given a task to design for the software such as if the students can use their own character such or their own cartoon by simplifying the



Figure 91: An imaginative representation of a character Baiti depicting the event it has been designed for.

outlines of the features to depict a character doing a trick as Courtney does by waving her hand riding on a flying car and communicating with a text box. “I’ve got the top down, lets go”, Earl who riding on a surf board communicating with a text box Surfs up, “Let us ride”, Rover moves his head allowing the long ears to wave and wags his tail and communicating though a bark and a text box. Merlin bows and communicates while a little old fashioned, a little digital magic is always helpful, on peer group discussion this assisted in encouraging the students to think imaginatively as well as different. A majority of the students could interact well with the ideas of effectiveness in design with the use of cartoon characters, while a few failed to do so.

The response was effective to assimilate the students’ understanding of the mediums of communication such as to design an effective medium for a viewer.

Chapter 5:

A look into the experiences gained by the use of various multimedia techniques

The chapter concludes with the experiences gained by the use of various multimedia techniques to represent social themes to communicate to a specific target group as well as with universal appeal. It is noticed that given freedom to choose and express ideas of their own as the necessity arises varied technical input would be good to motivate students from the very beginning of induction to the communication design.



5.0. Introduction

The whole exercise, that was conducted simultaneously while students were undergoing regular courses of the Department of Design of IIT Guwahati, to understand the students' perception of the knowledge domains pragmatically and the method to be followed to develop the final design representation of a theme.

5.1. Salient observations

The students were chosen to represent all India e.g., 5 % were from East India, 59 % of the students were from the North India, 28% from South India and 8% from West India. The students were adapted to multiple mediums of communication through inputs in a total effective span of 18 months in the study. This brings awareness about the mediums along with their effectiveness in specific applications.

The elements of design are through which the students got to understand the basic principles of form generation in design using the medium of graphic design. For example, the understanding of the visual elements of points, lines, planes, and volumes experimented. This was in the understanding that becomes more interactive with the experiments of using lines – straight, curved and kinked i.e., a sharp change in its direction. This effective design to a context with the understanding of the attributes of the visual elements for an understanding of the visual principles of composition of having the attributes of balance, rhythm, contrast, harmony, order, and chaos in them. This is to effectively interact with the principles of visual perception, color vision/perception and imaginative communication of the creation. This in turn effectively designed by the interaction of the introduction to fundamental principles of color, color theory i.e., hue, value, saturation, gray scale, cool and warm color to utilize it to interact with a given multimedia communication to make it effective by using the visual patterns and textures in the final design, materials and processes.

Though the students were from different parts of India, the overall understanding and involvement pattern confirms a homogeneity in the observation that, given a free hand to exercise the theoretical inputs, materials to internalize the learning.

The students learn better fundamentals of the web, video, hand sketching from the inputs from the elements of design. From the tests, it was observed that a majority of students had a good knowledge of the interaction with the software to complete the task. For students that fell in the poor software knowledge category, more interactions with the mediums are recommended such as to evaluate the peer group discussion to be pragmatic for its effectiveness.

Through which the students who were from different places in India the overall understanding and involvement pattern confirms a homogeneity in the observation that had given a free hand to the exercise, the theoretical inputs motivates to internalize the learning.

Knowledge of the final design of having to use the communications experience, imagination, arbitration, mediums of Video + SFX, Puppetry/ 2D – animation, 3D/ character / physical FX, CGI animation, cel-Animation, stop-motion effectively make the interaction more successful. From the tests it was observed that students had a good imaginative understanding of how the final design is to be delivered; more interactions with a peer group to discuss and do assignments through a feedback refinement unfinished phenomenon for the mediums are recommended such as to evaluate the pragmatic for its effectiveness.

It was also observed that the students had a good imaginative understanding of the methodology to represent the final design. It was due to the interactions with the peer groups to discuss and imaginatively represent to solutions. It was possible as on their own they had done the necessary literature survey to develop the final design of their assignments; that they should be empowered to do more of the hands-on assignments that they can emulate their creativity, means, and methods and follow accordingly. From the overall observation it

was noticed that a few of the students had inadequate knowledge of the medium and their appropriate application for the task, a few more had an average knowledge and a few more had a very good knowledge while inducted to the specific courses at the beginning when all the students were divided into small groups to do the assignments. Their group interactions have encouraged all to come up to a certain level of expertise; this is perhaps due to the benefit of the peer group interactions within. Thus it can be noticed that students are required to interact more among themselves utilizing the mediums of communication in smaller units while designing and have experience for its effectiveness to a larger group where a bigger platform of mutual understanding of the mediums of video and special effects (SFX), puppetry/ 2D – animation, 3D/ character/ physical effects (FX), CGI animation, cel-Animation, stop-motion animation etc. The larger group comprised of learner students as well as other non-participant observation, who are passive observers when the assignments were displayed for general view. Feed-back strengthens the overall grasp of the subject. A participant student, while looking to others exercises as an observer, could watch, follow, and record the activities which others had performed.

5.2. Discussions and inferences

The task to test out the effectiveness of the students' comprehension of the effective multimedia communication of their interaction to analyze the acceptance of the different mediums of Interaction design task for their effectiveness. A medium can be a communication which addresses the storage and transfer of data used to store and deliver information or data. In the field of natural science a medium is a processing in which industrial engineering use materials which play a part in the process of manufacturing, the medium is excitable which can communicate a data of a description that can assist the interaction of another for a period. A medium of entertainment has data from the creative field of communication in art, opera, television, movies etc., and medium of spirituality addresses the interaction between the physical world and the spiritual world, a medium is essential to interactive design. To study the pragmatic of a group of students of their assumption of the effectiveness of

many mediums which have been used by them to bring effectiveness to their designs was taken up.

The student-centric design evaluation of the effective multimedia communication in design by the students centered designs is an evaluation of the effectiveness of the interaction in systematic plan, study and design of the communication of the students as well as the medium of interaction, that borrows from each other the techniques such as computer graphics, operating systems, the encrypted program written for the generation of the content for the story line it is designed for is crucial for the effectiveness of final designs. Analysis is essential to categorize the complex imaginative communications interactive experience, in smaller sections such as to effectively understand the medium such as qualitative, quantitative as well as interactive.

Qualitative research is a method of inquiry employed in many different disciplines, to gather an in-depth understanding of human behavior and the reasons that govern the behavior thus; smaller but focused samples are more often needed, rather than large samples. Qualitative methods produce information only on the particular cases studied, and any more general conclusions are only hypotheses (assumptions). Quantitative methods can be used to verify which of such hypotheses are true. In the analysis provided by qualitative and quantitative tools and methods to measure and analyze the results achieved at the experiments, process, program and enterprise levels.

Result-driven measurement helps to identify and define software measures to support the goals of the experiments. Experiments run on data. It is used to manage experiment, make decisions, and guide improvement. But how reliable is the data collected? How good is the data? Are the right things done in measurement and analysis? Is it doing well? How good is the information generated? How to improve measurement processes and improve the information quality? In design, the methods have a broad focus area i.e., divergence that explores many possibilities and constraints of received conditions by applying critical thinking through qualitative and quantitative research methods to create new understanding toward better design solutions

using the available mediums of communication that is multimedia transformation which redefines specifications of design solutions which can lead to better guidelines for traditional and contemporary design activities (architecture, graphic, industrial, information, interaction, et al.) and / or multidisciplinary response and convergence that prototypes possible scenarios for better design solutions that incrementally or significantly improve the originally inherited situation, Sustainability to manage the process of exploring, redefining and prototyping of design solutions continually over time and finally articulation of the visual relationship between the parts and the whole.

The design of experiments or experimental design is the design of gathering information exercises where the variations are visible, if under complete control of the experimenter or not under the complete control. With the changing values and awareness among the communities it has become easier to deliver the intended message to the chosen students with ease, but the appropriate medium for the message is essential to make it effective for the students, a study to identify the most effective interactive mediums of communication experience to deliver the message. In the selection of a medium of interactive multimedia communication it becomes essential for a student to derive maximum effectiveness out of it so as to communicate effectively. The mediums available are much more than that were available a few years back. Today's student has assumed that information is everywhere, one just needs to interact to get it.

With various imaginative communication experience of interactive communication available such as animation a medium of communication as an educational tool for students to learn in a creative way, exploring the environment, working with practical animation techniques in small teams.

Animation is creating life, bringing objects to life, telling a story about the world we all are part of. It is fun, exciting and fascinating. The students will experience being absorbed in a world where time and place do not exist. It is

like being in an imagination as in wonderland, and it will be beneficial to all youngsters to have this experience.

Theories of learning and instructive will be practiced, where the students will carry out an experiment with the pedagogical possibilities of Animation as a learning tool. The theories assist in giving students an experience of culture and traditions of learning. Storytelling is communicating events in Multimedia using the mediums of words, images, and sounds, etc., stories or narratives have been shared effectively in every culture as a means of entertainment, education, cultural preservation and in order to instill moral values.

Crucial elements of stories and storytelling include plot, characters and narrative point of view using the stories. Using animation as a tool to encourage and develop youngsters learning is not only fun but effective. Communication is the process of transferring information. This communication requires a sender, a message, and an intended recipient, though the receiver need not be aware or participating of the sender's intent to communicate at the time of communication. The communication theory has three levels of the problem as argued by the Shannon and Weavers model i.e. the clarity of the message transmitted, the technical design problem, the accuracy of the meaning conveyed, the semantic problem and its effectiveness. Can the behavior be affected by the meaning received, the effectiveness problem?

Interactive multimedia communication tool centric study is frequently being heard and discussed among educational technologists today. Multimedia is the exciting combination of computer hardware and software that allows you to integrate video, animation, audio and graphic test resources to develop effective presentations on an affordable desktop computer. Too many of us, especially in the field of design, seem to be caught up in this modern tug-of-war.

Throughout the 1980s and 1990s, the multimedia concept took on a new meaning, as the capabilities of satellites, computers, audio, and video

converged to create new media with enormous potential. Together with advances in hardware and software, these technologies were able to provide enhanced learning facility and with attention to the specific needs of individual students. The fundamental objective of Interactive multimedia material is not to replace the instructor but to change the interaction concept completely.

Planning the methodology for the interactive multimedia communication study requires a careful mixture of text, graphics, audio, animation, and video elements. When a student is allowed i.e., as a viewer of a multimedia project, to control what and when and how of the elements that are delivered and presented, it becomes an effective and motivational interactive multimedia learning for them.

The instrument of measurement for the interactive multimedia communication study in this section: it has been argued that interactivity is not singled out to computers or networks and cannot be reserved solely for the discussion of so-called new media. The term new media is now not very effective and is misleading, as in the present scenario the latest technology can be new, and to take it ahead, new concepts need not be devised, even though to be in the limelight.

The analyze of the interactivity of Video + SFX, Puppetry/ 2D-animation, 3D/ character/physical FX, CGI animation, cel-animation and stop-motion use of a questionnaire is a methodological set of questions for deriving information from the respondents. The main objective is to translate the researchers' information needs into a set of specific questions that respondents are willing and able to answer. While this may seem straightforward, questions may yield very different and unanticipated responses. For example, of how would you answer the following question: Which State is larger, Assam or Bengal (two states in India)? Where there is an ambiguity of if the answer is based on population or area? The mediums were categorized as the mediums of Video + SFX in which Bindas Bol, Commonwealth Games 2012, and Anti-smoking campaigns were analyzed. The medium of Puppetry had three case studies,

Haddi Raja, Gali Gali Sim Sim and Steam Boat Willie, the medium of 3D/ character/ physical FX had discrimination awareness, mobile service promotional and national integration, the CGI animation had Hanuman, Anti-war campaign, and Smurfs campaign. The medium of Cel-Animation had Discrimination, Ek Anek, and Chotta Bheem. And based upon these the students used students centered communications experience, in aesthetic, abstract methodology came up with their own communications that were interactive which were an anti-ragging video based stop-motion animation communication, a violence campaign, an anti-litter campaign, an event promotional, a discrimination awareness using an eraser as a central character, a self-realization animation, a corruption awareness, a superstition awareness and a Green campaign using clay animation.

The response was designed such as to allow the ease of use for the students, with a familiar response format such as to do away with any ambiguity. A few test were conducted to reassure the need to evaluate the interaction in the test for awareness of interactive mediums of communication, test for visualization, imagination, creativity and aesthetic sensitivity. To analyze the fundamental awareness, a simple test of analyzing a communications experience, imagination test of key frames to give the students the advanced communications experience, imaginative interactive multimedia communication was conducted and, a favorable majority was successful to get it right, effectiveness of visual culture is important in design, due to its multidisciplinary approach of combining the culture studies, aesthetic background.

The science of human behavior and how they work and the rational communications experience in interactive imagination that rely on the visual imagery communications experience, aesthetic representation of having to test the foundations from the introduction of the basics of the animation design, production, and scriptwriting have been discussed with students. These were mentioned along with the importance of the effectiveness of visual culture in the study of animation. From any one of the case studies showed a drop from the initial task of having to choose the right sequence from a few scattered

images. The communications experience of imagination resulted in a majority of them interacting well and this could be due to the reason of having to perform more number of communications experiences, in using refinement than just choosing visually. The students had to interact based upon the understanding of production and scriptwriting of animation.

The communications experience, using imaginative representation helped in understanding the students' capability in the multimedia communication of design, of first interact with the medium as in learning by doing rather than studying the medium. To understand the students' communications experience, in refinement of interaction of mediums to a given context to evaluate its effectiveness was evaluated by giving a communications experience, imaginative interactive task of having to design for the kind of ranges or the types or styles of animation techniques that you can use with each different mediums to effectively design traditional animation practices where each frame is drawn by hand and their importance and relation to contemporary animation techniques such as Stop motion animation technique, flip book, cutout animation, 3D animation, from the examples analyzed to effectively communicate the essence through a campaign for a Green campus.

It was effective in majority of the students using their creativity of thinking out of the box and bringing out concepts due to the motivation of having to interact with a cause campaign for the Green campus, the communications experience, in interactive imagination also brought forward the students who could not come up with creative concepts i.e., a small percentage of the students who needed more interaction for them to design better. A communication's experience in imaginative representation method to evaluate the inferences of the introduction to specialized areas in multimedia such as light effects, Cel-Animation, character animation, clay animation and puppet animation how can it be effective in spreading an awareness of harms of the use of carcinogens such as tobacco, how can the design effectively communicate it to the viewer showed a majority of the students who could bring out concepts that were effective while there was still a small who could

not do so, due to the lack of visualization, this can be corrected with interactive multimedia to increase its effectiveness.

A majority of the students had an adequate awareness of the mediums of communication as well as the communications experience, creativity of the end result, with a sound clarity of the task, good knowledge of the interaction of the design task from the data survey of the results from the various mediums of communication for their effectiveness of the students' interactivity, it was observed that a majority of the students by the use of peer group discussions to do the assignments through a feedback refinement unfinished phenomenon utilized mediums that had more interactivity. Similar to the design of 3D design in which the interaction of the students with the software happens after a careful study of the physical prototype made in using the materials of clay, Thermocole (Polystyrene), wood as well as everyday objects to make them interact with the design such that the students' pragmatic of the materials with respect to the time taken to perform the task along with its effectiveness. It is a type of data collection evaluation widely uses to in the qualitative study framework which is a typically used technique in multimedia like particularly cultural science of humans and their works. This is not used as much in the science or study of the beginning, progress, structuring arrangement, and process of the society we live in, that uses the various guidelines used in the study of interaction, communities and behavior, whose goal is to effectively interact with the various beliefs of the students and the activities of interaction.

The abstract of with multiple mediums of interaction available, it has become essential for a designer to choose the medium that can be most effective for the chosen students. The popular mediums identified for the interactive study are special effects, cel-animation, Puppetry, Video and Stop-motion animation. Case studies were made available to a group of the students, so as to get an exposure of the available mediums of interactive multimedia communication. The findings from the study gave a surprising revelation of the preference of the students in choosing the medium for the communications effectiveness with more than half the students preferring the stop-motion

medium to be used to communicate. The study focuses on the students-centered imaginative communication methodology to reveal the vein of the interactivity which was the students having a flexibility of using the expertise of using observation, being able to create which is an inventive process, an appreciation of the invention to interact by studying the inventive students-centered abstract pragmatic methodology to make the design effective for its aesthetics, semiotics, and semantics in design.

With various mediums of interactive communication available such as Animation a medium of communication as an educational tool for students to learn in a creative, exploring the environment, working with practical animation techniques in small teams. The animation is creating life, bringing objects to life, telling a story about the world we all are part of. It is fun, exciting and fascinating, and the students will experience being absorbed in a world where time and place do not exist. It is like being in Wonderland, and it will be beneficial to all youngsters to have this experience. Theories of learning and instructive will be practiced, where the used will carry out an experiment with the pedagogical possibilities of animation as a learning tool, to give the students an experience of culture and traditions of learning.

Communication is the process of transferring information. communication requires a sender, a message, and an intended recipient (Chong, 2011). though the receiver need not be aware or participating of the sender's intent to communicate at the time of communication.

In this thesis, it has been argued that interactivity is not singled out to computers or networks and cannot be reserved solely for the discussion of so-called new media. The term new media is now not very effective and can be misleading, as in the present scenario the latest technology can be new, and to take it ahead, new concepts need not be devised, even though can take prominence. This study could bring forward a pattern, in which it was observed that the students could utilize the representation from their own experience, in the imagination to decide and use thought but added with the

feedback of the refinement of the unfinished phenomenon helped in its effectiveness.

5.3 Conclusions

The study of the effective multimedia communication students' perspective of the communications experience, using imagination in interactive multimedia communication and its effectiveness in design managed to give an insight into the students' methodology in being able to come up with concepts to design using the available mediums, but not effectively trying to go the extra distance to check its effectiveness due to the reluctance to think out of the box, but the students' communications experience, in imaginative use of the multimedia to interact with the communications experience, in the use of the creative usage of mediums to effectively design solutions through a feedback refinement unfinished phenomena.

The study observes preference of positive and abstract presentation over real life direct reflection the multimedia application of social issues. The study was effective to unearth the hidden fact of the medium which was most preferred way may be aesthetically appealing that goes very deep to mind without inserting repellent type noise in mind with communication that can distort the message (fear or direct application of real life erases in time where abstract presentation is far sustainable. The study gives a thought that positive and aesthetic presentation may be more effective than presenting real life fear creating approaches; that suggest further inquiry into context-specific applications.

The utility of effective multimedia communication was tested out to through divergence, transformation, convergence, sustainability, interactive multimedia communication and its effectiveness in the application in every sphere of our lives a case study in digitized cel-animation. Basic principles of form generation, specific to graphic design, are the understanding of the visual elements of points, lines, planes, and volumes. These become more related to the experiments of using lines – straight curved and kinked in being able to

effective to a context with the understanding of the attributes of the visual elements e.g., balance, rhythm, contrast, harmony, order and chaos in them. Principles of visual perception effectively depend on the communication of fundamental issues of color theory i.e., hue, value, saturation, gray scale, coolness and warmth in various applications.

Color makes us utilize it to relate to a given multimedia communication of being natural and man-made structures are introduced by identification of the elements present in the design. The communication becomes effective when the students feel themselves a part of the medium. To understand the means and methods for such an interface, a pilot study was conducted to get the communications experience, aesthetics, abstraction. A popular entertainment segment from a feature film song sequence was chosen for study content.

Students were asked to evaluate the effectiveness of communication, if the same sequence can be transferred into an animated scene. The cel-animation technique thus inspired the feasibility of application. It was visualized through application possibilities of various techniques including digitizing the expression of human movements so as to allow the viewer to go along with human capabilities in relationship to their work demands. Thus by enabling the use of graphic design elements, one can effectively use Interactive multimedia communication for a given subject to make it prominent.

The key words of animation; cel-animation; humane factors; Interaction; student-friendliness were used in the study. A student-centered design is to take the evaluation of interactivity through the systematic planning, studying and designing of the communication between the students and the systems in which they interact. It borrows the inputs from both the medium of the system as well as the students, through the techniques of multimedia, for example computer graphics, the operating system, the coded program along with the story line it has been designed for plays an important part in the outcome of the effectiveness of the final design. The analysis is the process of categorizing an interactive complex designs into small parts to gain an

effective understanding of the medium such as qualitative, quantitative as well as interactive.

Divergence is in exploring many possibilities and constraints of received conditions by applying critical thinking through qualitative and quantitative research methods to create new understanding toward better design solutions using the available mediums of communication that is multimedia. Transformation is the Redefining specifications of design solutions which can lead to better guidelines for traditional and contemporary design activities (architecture, graphic, industrial, information, interaction, and et al.) and or multidisciplinary response, convergence prototyping possible scenarios for better design solutions that incrementally or significantly improve the originally inherited situation. Sustainability is in managing the process of exploring Redefining and Prototyping of design solutions continually over time Articulation - the visual relationship between the parts and the whole The students used a video from the internet medium of Youtube to experiment with rotoscoping using digitized Cel-Animation technique, by using the software flash to bring out their final animation.

The study of the students' communication and its effectiveness in design managed to give an insight into the students' methodology in coming up with concepts to design using the available mediums, but not effectively trying to go the extra distance to check its effectiveness due to the reluctance to think out of the box, but the students' imaginative interaction uses the multimedia to interact with multimedia communication to bring out design solutions effectively. The basics of design fundamentals of the emphasis on the elements of design, could enable the students to allow the structure to enable the flow of the information necessary to enable the design by discussing the historical backgrounds of the interaction in design, identifying the factors that enable motivation for the JEE inclined students who could follow a set pattern in problem solving that they followed, while design problem solving can be a different paradigm to find solutions with. A problem needs to be identified first, the parameters of the design development process in defining the design that the student had been trained with their perceptions, the objectives of the

design process, the constraints under which the design has to design a design to produce a design as mentioned by John Heskett in the book Design -A very short Introduction. The term needs to be followed so as to enable a student to learnt the technique of animation through the fundamental courses imparted through the initial courses so as to utilize the multiple ranges, types, styles of the animation techniques, the analog animation techniques using light boxes, using stop motion along with the digital animation techniques using scanned images and 2D computer graphics that could be used to interactively communicate the message effectively. The techniques used could instantaneously allow the viewer to get the gist of the interactive communication, by using the effective technique to touch upon the element that could trigger the intelligence of the viewer to easily comprehend the final message.

5.4 Thesis significance

The thesis confirms that more assignments oriented input i.e., hands on experience with guided freedom of expressing self is one of the best methods of learning and motivating the students that can be a core factor for deciding an academic syllabus related to creativity.

5.5 The scope to carry forward

The need for a more practice-based approach to teach design through more interaction has been taken into consideration, as there is more interaction, with the task to be done rather than first learning the subjects theory and then use the utilizing it in a practical way i.e., interact with the newness of the theorized material to a faster result-oriented approach in the abstract method in doing and learning from the experimental methods of executing the assigned task. The UCEED structure seems to have taken the inputs, and have modified it to no lecture component and giving more emphasis on the studio component and its practicality in the output such that it becomes much more effective than was before with having a lesser impartment of bookish knowledge transfer but of having tutorial and practicality of the subject such that there is more emphasis given to the actual execution of the design. This too might need to

be tweaked based upon the students' adaptability of the interactive communication to come up with better interactive communication.

The primary limitation is the mind-set of the students who have been inducted into the design education with the hyper-technological or too creative attitude, who might not be satisfied with the knowledge acquired and its abstract usage, due to the homogeneity of the groups. It was done by designing the task to be done individually first and in groups later. It was done to get each student well adapted to the theories and its emphasis on the practicality of the design task to enable solutions rather than in creating more problems to be solved. Each student was given their individual space could explore the knowledge on their own and take inputs from peers, which was essential as the peers have prior knowledge of the theories and the techniques required to enable ease of use to bring out designs based on the theories and the context it needs to address.

The designs and their effectiveness were discussed in the department along with other faculty members and experts, on seeing the results of the students' knowledge of the design theories and their techniques, the main emphasis was to get the students to come out of their own inhibitions and to come out with their own thought processes, such as to give more emphasis on each and every innovative design through the scrutiny of their peers and group discussions to bring forward designs that were effective. The next level is to allow the students to explore their own aspired designs with an adaptive atmosphere such as to secure the designs from causing harm to others. MHRD has started the intake mechanism for design-oriented students (from a varied range of backgrounds not specific to Physics, Chemistry and Mathematics oriented) through a separate qualifying test UCEED, (Undergraduate Common Entrance Examination for Design) the intake of the students had been initialized last year at IIT Guwahati. Extension of the assignment based free to explore the approach for the set of students from UCEED to cross check its universal effectiveness of training input to varied heterogeneous entry to make them homogeneous expert multimedia communicators.

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2. Manoj Majhi and Professor Debkumar Chakrabarti – Interactive multimedia communication : case study in digitised cel animation in Humanizing Work and Work Environment, International Ergonomics Conference December 3rd -5th December 2014 IIT Guwahati
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