Tech Tonics

TIMSCDR Research Journal

Volume 1 2014-2015

TECH TONICS

The TIMSCDR Research Journal

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO-1 : To enable students to gain knowledge across all domains of Information Technology with in-depth understanding of their applications.

PEO-2 : To enable students to analyze problems and to design and develop software solutions using emerging tools and technologies.

PEO-3 : To enable students to continue Life-long learning, Research and Entrepreneurial pursuit in their chosen fields.

PEO-4 : To develop communication, teamwork, and leadership skills necessary to manage multidisciplinary projects and serve the society as responsible and ethical software professionals.

PROGRAM OUTCOMES (POs)

1. Apply domain specific knowledge of computing and mathematics for designing of software solutions for defined problems and requirements.
2. Understand and analyze a problem and suggest feasible solutions.
3. Design, evaluate, and develop effective solutions for complex computing problems to meet desired needs.
4. Design and conduct experiments and use research-based methods to investigate complex computing problems.
5. Use appropriate techniques and software tools for computing activities.
6. Understand and commit to professional norms, regulations and ethics.
7. Recognize the need for and have the ability to engage in independent learning for continual professional development.
8. Understand and apply project management principles, as a member or leader in multidisciplinary environments.
9. Effectively communicate technical information, both oral and written with range of audience.
10. Analyze societal, environmental, cultural and legal issues within local and global contexts when providing software solutions.
11. Work as a member or leader in diverse teams in multidisciplinary environments.
12. Use Innovation and Entrepreneurship for creation of value and wealth.

PREFACE

It gives us immense pleasure to present the inaugural volume of our Research Journal – Tech Tonics –The TIMSCDR Research Journal. The Journal contains scholarly research papers contributed by students of MCA (Masters in Computer Applications). The research manuscripts comprise of information from the domain of Information Technology and Applications.

Through this Journal our team depicts the need for research amongst students at the Post Graduate level and how this knowledge can be applied by them either analytically or practically when they have interface with the Industry. It is also an effort to inculcate amongst the students the ability to think and innovative new ideas in the dynamic field of Information Technology.

This inaugural volume presents research work in the field of Human Computer Interface (HCI). Each paper provides exemplified information about the applications of HCI in day to day life. Most of the research papers in this volume have included factual data (primary data) gathered through questionnaires and interview techniques. Efforts have been made to analyze the data and correlate it to explain the research ideas spelt out in the research papers.

Finally, this Research Journal is a humble effort to encourage the young and resourceful minds of the students with the ability to do research using latest techniques, innovate and pen down new ideas in the field of Information Technology.

Dr. Vinita Gaikwad

ACKNOWLEDGEMENT

Our sincere thanks to Dr. Vinita Gaikwad, Director I/c, who guided us at every step throughout the making of thè journal. Without her guidance and persistent help this dissertation would not have been possible.

We extend our deep gratitude to all the reviewers who have devoted valuable time to provide prompt feedback.

We are thankful to our faculty members for their valuable inputs for selecting the name of our journal- Tech Tonics.

We would also like to thank all the student authors for their contribution in the research journal.

A special thanks to the Research Cell Student Members for assisting in making of Tech Tonics.

Research Cell Team
(TIMSCDR)

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Do The Design of Interface affect Work Productivity ?

Guided By: Dr. Vinita Gaikwad
Atticus S. Fernandes, Amit Dwivedi, Jigisha Agrawal, Swati Verma, Prathamesh Gupte,
Peter Sequeira, Nisha J. Maurya, Foram Vithlani

Abstract - **Our quest it to determine whether or not a good G.U.I which is aesthetically pleasing is more appealing to the user and how does it help the user to increase the productivity of the work which he/she has to perform using that very interface. Our research shows us the Mental Model of the user as to how he/she prefers the G.U.I and what short comings are faced in the current G.U.I.**

I. INTRODUCTION

The use of typography, symbols, colour, and other static and dynamic graphics are used to convey facts, concepts and emotions. This makes up an information-oriented, systematic graphic design which helps people understand complex information. Successful visual communication through information-oriented, systematic graphic design relies on some key principles of graphic design. Our goal is to reach out to the masses and based on their response improvise the Human Computer Interaction Interface.

There are three factors that are taken into consideration for the design of a successful user interface : development factors, visibility factors and acceptance factors[1].

A. Development factors

They help by improving visual communication. These include: platform constraints, tool kits and component libraries, support for rapid prototyping, and customizability.

B. Visibility factors

They take into account human factors and express a strong visual identity. These include: human abilities, product identity, clear conceptual model, and multiple representations.

Included as acceptance factors are an installed base, corporate politics, international markets, and documentation and training.

C. Visible language

It refers to all of the graphical techniques used to communicate the message or context. These include:

- Layout: formats, proportions, and grids; 2-D and 3-D organization
- Typography: selection of typefaces and typesetting, including variable width and fixed width.
- Color and Texture: color, texture and light that convey complex information and pectoral reality
- Imagery: signs, icons and symbols, from the photographically real to the abstract
- Animation: a dynamic or kinetic display; very important for video-related imagery
- Sequencing: the overall approach to visual storytelling
- Sound: abstract, vocal, concrete, or musical cues
- Visual identity: the additional, unique rules that lend overall consistency to a user interface. The overall decisions as to how the corporation or the product line expresses itself in visible language.

II. OBJECTIVES

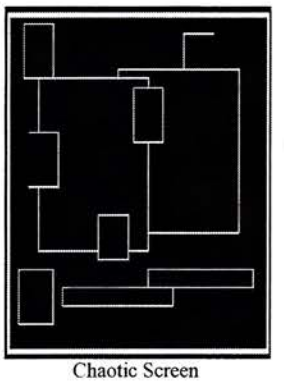
- Better menus for navigation improves productivity
- Aesthetic sense implicitly increases productivity
- Quality of info available
- Consistency with respect to flow and working
- Usage of Graphical Objects in place of textual instructions

III. PRINCIPLES OF USER INTERFACE

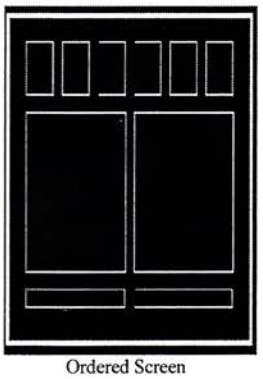
There are three fundamental principles involved in the use of the visible language.[3]

A. Organize

Consistency, screen layout, relationships and navigability are important concepts of organization. Provides the user with a clear and consistent conceptual structure



Chaotic Screen



Ordered Screen

B.Consistency

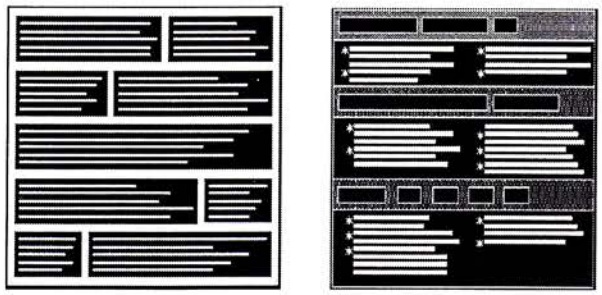
The Consistency of the interface on which the user is working should be constant and variation among the forms after every form cause the G.U.I to be effect-less.

C. Navigability

There are three important navigation techniques: - provide an initial focus for the viewer's attention - direct attention to important, secondary, or peripheral items - assist in navigation throughout the material.

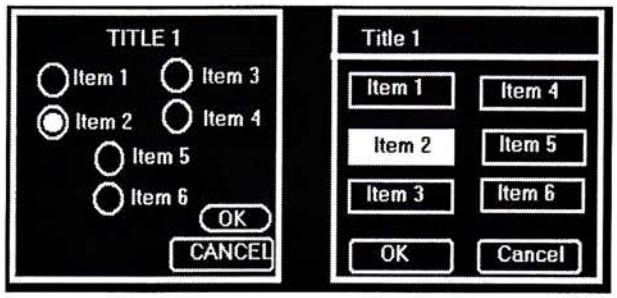
LEFT: Poor design.

RIGHT: Improved design; spatial layout and color help focus viewer's attention to most important title bar areas. Bulleted items guide the viewer through the secondary contents.



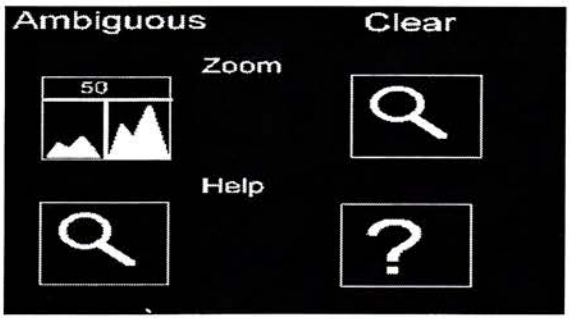
D. Simplicity

Simplicity includes only the elements that are most important for communication. It should also be as unobtrusive as possible.



E. Clarity

All components should be designed so their meaning is not ambiguous.



Iv. SURVEY

A recent Innovation column in the New York Times' "Magazine" section posed the question "Who made that progress bar?" Part of the answer includes HCI Professor Brad Myers.[4]

Our survey was conducted amongst varied age groups and diverse areas in terms of profession as well as locality. We have included the basic applicable principles of H.C.I and made it aware to the users in a Layman's language. Our findings are terms in the statistics placed below. Our questionnaire was distributed in hardcopies as well as online based Google doc forms [5].

IV. STATISTICS

1.Is Consistency a must through a website?
-Yes -No

2. Does the use of graphics appeal to you visually?
-Yes -No

3.What types of colours do you prefer?
-Dark -Light

4. How do you prefer the contents to be displayed on the screen?
-All the content in a single screen -
Contents placed in terms of menus

5. Do you require links for additional information?
-Yes -No

7.Do you use web application or desktop application
-Yes -No

8.Do you prefer using menus for navigation
-Yes -No

9.Should there be multiple ways of performing the task through navigation
-Yes -No

10.Should there be multiple modes of inputs available
-Yes -No

12.Is there a need for the help option to navigate through the website
-Yes -No

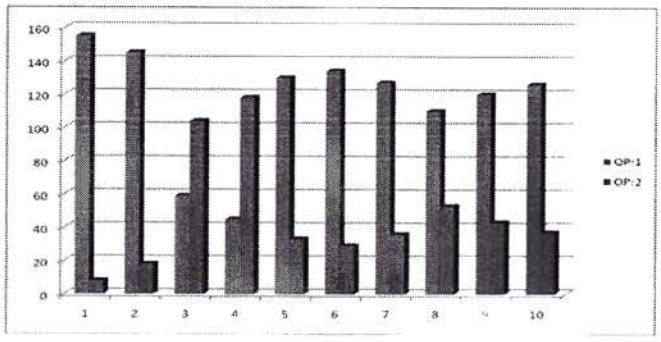


Fig-1:Statistic of survey questions: 1,2,3,4,5,7,8,9,10,12

6. What should be the frequency of the data (content) updating ?

-Daily -Weekly - Fortnight -Monthly

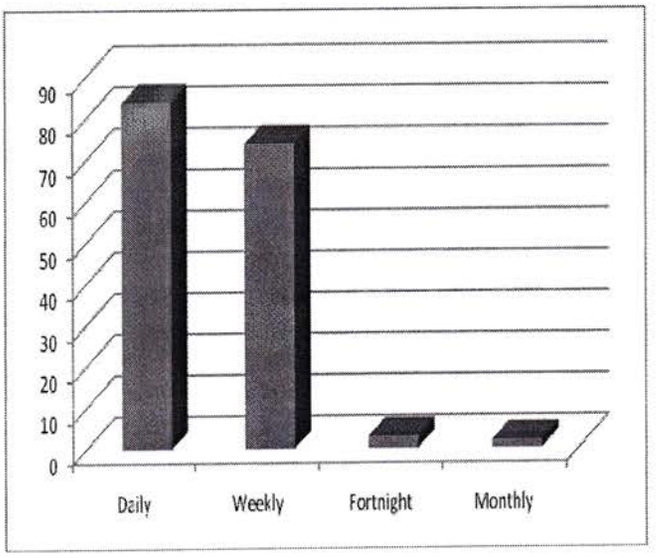


Fig-2: Statistics of survey question: 6

11.What level of graphics do you prefer for better navigation -Text only

-Moderate graphics

-High level with minimum text

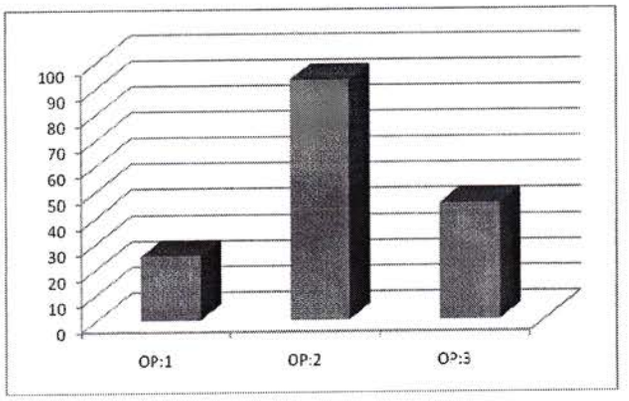


Fig-3: Statistics of survey question: 11

13.Choose the most productive website that you would use from the options given below :

-Facebook

-Twitter

-Orkut

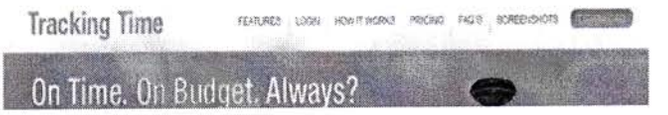
-Linked

-Instagram

-Google+

-Others (Mention the site)

Now justify as to why you choose that website



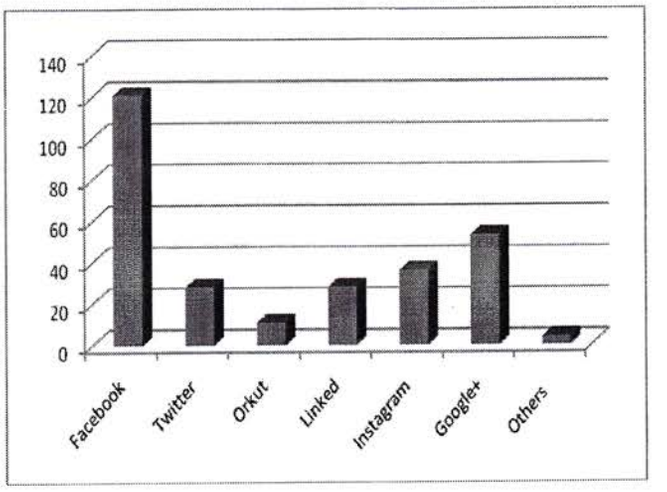


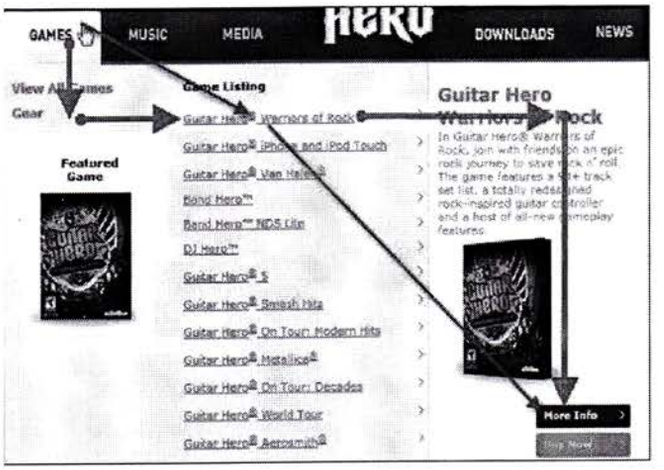
Fig-4:Statistic of survey question: 13

14.

OR

16.

OR



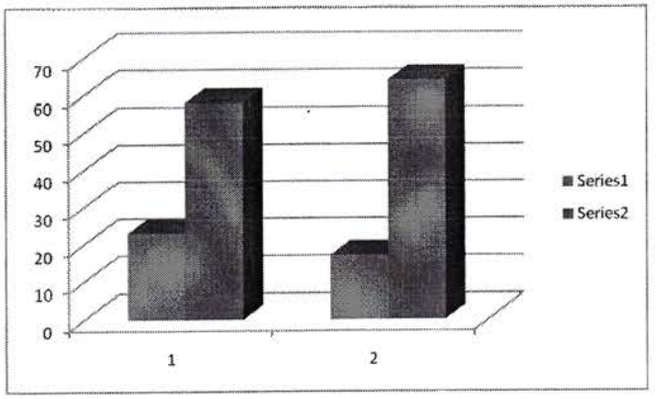


Fig-5: Statistics of survey questions: 14, 15

V. CONCLUSION

Thus based on our research, the vast gathering of knowledge through surveys, the thorough inputs of HCI and the self-spoken statistics displayed in our report we can surely conclude that the design of an interface plays a vital role in increasing the productivity of the workers and the design can be improved based on the menu options provided for navigation, the need of an aesthetic sense in design a GUI, the information relevancy displayed on the GUI, the consistency maintained by the GUI and finally the usage of graphical object to make up for textual data. All the mentioned points have been discussed through and a near to perfect results have been obtained and all the results obtained go in line to pointed mentioned in HCI in order to gain productivity.

VI. ACKNOWLEDGMENT

We as a group would like to show our deepest admiration and gratitude to our beloved Director I/c Vinita Ma'am for her constant guidance, support and her teaching in HCI. It is due to her undying Efforts and ever presents invaluable inputs by which we can say this Project was an enthusiastic and a good learning experience. We would also like to extend our thanks to all those who helped us directly as well as indirectly in making this project a successful one.

VII. REFERENCE

[1]Marcus, A. SIGGRAPH 93 tutorial notes: Graphic Design for User Interfaces. August 1993.

[2] HCII, Carnegie Mellon University *(http://www.hcii.cmu.edu/)*

[3] *https://www.si.umich.edu/academics/msi/human-computer-interaction-hci*

[4] Paper on Human Computer Interface published in National conference

[5] SIGCHI Curriculum Development Group

[6] The Essential Guide to User Interface Design- Wilbert O. Galitz

The Effects of Social Interactive Chat Systems and Reaction of People

Guided By: Dr. Vinita Gaikwad
Sneha Joshi, Ruchira Desai, Swati Dubal, Nikita Jajodia, Shruti Mehta,Vinit Borkar,
Narendra Naidu, Ravikiran Rahul Pal Bhat

Abstract—**Topic for our research was 'The Effects of Social Interactive Chat Systems and Reaction of People'. Aim of this research was to gain an insight on the usage of social networking applications by the people and the kinds of reactions it generates amongst them, all from the point of view of HCI. A brief study was conducted by our team regarding the same and various conclusions were drawn based on the results obtained. Online and offline survey was conducted and some statistics were generated based upon the responses received. We hope to gain more knowledge not only about the effects that social media has on our society but also explore the human-computer relation a bit further.**

I. INTRODUCTION (WHAT IS HCI?)

Human–computer interaction (HCI) involves the study, planning, design and uses of the interaction between people (users) and computers.

Because human–computer interaction studies a human and a machine in conjunction, it draws from supporting knowledge on both the machine and the human side.

On the machine side, techniques in computer graphics, operating systems, programming languages, and development environments are relevant.

On the human side, communication theory, graphic and industrial design disciplines, linguistics, social sciences, cognitive psychology, social psychology, and human factors such as computer user satisfaction are relevant.

II. SURVEY

A. *Objectives*

The survey was conducted considering the following objectives to be studied in various chat applications:-

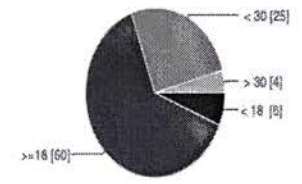
- Sharing pictures, videos, files.
- Sharing locations and contacts.
- To communicate realistically with people and group communication
- Broadcasting common message.

To find which social chat system is most widely used and rated by the people.

B. *Figures and Tables*

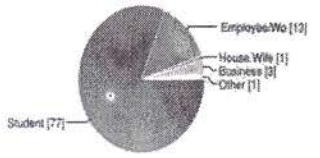
The figures below depict the statistics of the total 95 responses received in a pictorial format :

Your Age



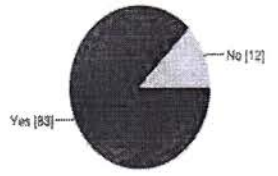
< 18	6	6%
>=18	60	63%
< 30	25	26%
> 30	4	4%

Profession/Occupation



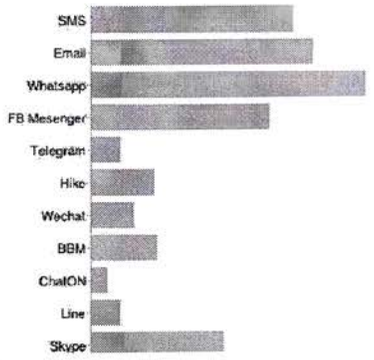
Student	77	81%
Employee/Working	13	14%
House Wife	1	1%
Business	3	3%
Other	1	1%

Do you use Smartphone?



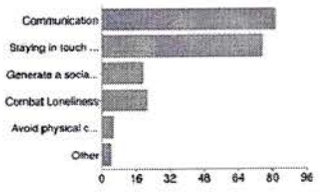
Yes	83	87%
No	12	13%

Which communication/social networking app(s) do you use?



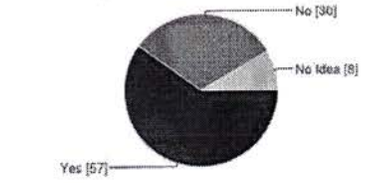
SMS	61	15%
Email	67	17%
Whatsapp	83	20%
FB Mesenger	54	13%
Telegram	9	2%
Hike	19	5%
Wechat	13	3%
BBM	20	5%
ChatON	5	1%
Line	9	2%
Skype	40	10%
GTalk	22	5%
Other	4	1%

Why do you use it?



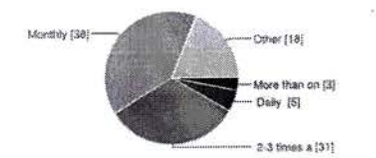
Communication	81	40%
Staying in touch with friends & family	75	37%
Generate a social profile/image	19	9%
Combat Loneliness	21	10%
Avoid physical confrontation	5	2%
Other	4	2%

Have you implemented 'Privacy settings' in your chat system ?



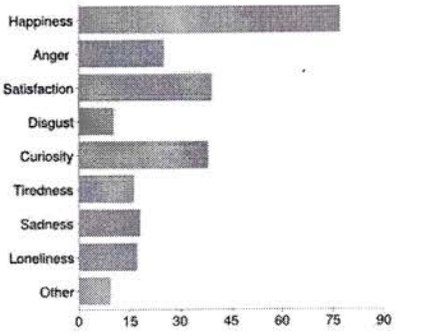
Yes	57	60%
No	30	32%
No Idea	8	8%

How often do you change you DP(profile picture)/Status?



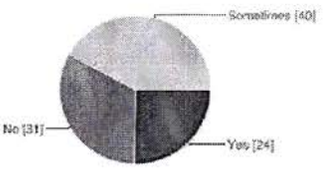
More than once a day	3	3%
Daily	5	5%
2-3 times a week	31	33%
Monthly	38	40%
Other	18	19%

What kind of emotions do such social apps trigger in you?



Happiness	77	31%
Anger	25	10%
Satisfaction	39	16%
Disgust	10	4%
Curiosity	38	15%
Tiredness	16	6%
Sadness	18	7%
Loneliness	17	7%
Other	9	4%

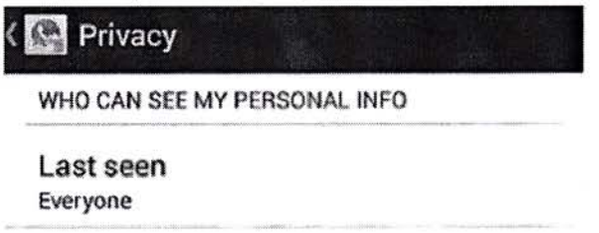
Are you addicted to social networking apps/chatting system?



Yes	24	25%
No	31	33%
Sometimes	40	42%

III. FURTHER QUESTIONS

A. For the question *"Are you comfortable with the 'Last seen' option in WhatsApp? Yes/No. Why?"*



There were mixed reviews. Maximum people said No because they say it is like stalking around but in spite of this some said Yes and favored it by saying that it helped them know when to message someone.

B. For the question *"What if all these social apps were to be shut down for one full day?* Or *how would you react to „A day without internet"?"*

Some of the most common answers received were:
- It would be frustrating and boring.
- Would feel handicapped.
- Day would seem very incomplete.

People also gave following replies:
- It won't matter, not addicted to it.
- Have loads of important work to do, won't bother
- It's not a big deal, can call people and still stay in contact.

C. For the question "Would you recommend social networking apps to others? If yes why?"

The most popular replies received were:
- Yes, because it's an easy way to communicate.
- They are cost effective.
- They help to share media.
- Faster communication.
- Connects you with people all around the world.

D. "Are you more comfortable to talk to someone in person or more via such apps? If yes why?"

Maximum people went with In-Person chat because they feel talking face to face helps them express themselves better.

Few also favored such apps and stated themselves as shy and feel that it helps them communicate better here.

E. "Do you chat with people (folks) in the same room? Yes/No. Why?"

Here were many interesting replies:-
- Yes, for fun!
- Students said that we chat in classrooms while lectures.
- Office people said to communicate while office hours.
- To tell something only to a person within the room.

But few said NO we don't, that's really too much.

IV. CONCLUSION

From the survey and research we conducted, we drew the following conclusion:

- Average time spent online by an individual was between 12 to 18 hours.
- The no. of hours spent is directly proportional to the appeal of the interface.
- Use of social networks : Positive emotions > Negative emotions
- Cleaner, minimalistic designs > Cluttered, mundane interfaces.
- Majority of the respondents showed positive attitude towards usage of social networking apps.
- People (mostly students) spend more time on social networking apps having the simplest GUI.
- WhatsApp is the most preferred instant messenger while Facebook is the most used social network (71% of online adults use Facebook).
- Highest suggestion obtained was of including File transfer i.e. sharing of big documents and files via WhatsApp.
- Most of the respondents favored the "last seen" feature.
- More preference to simple, easy-to-use interfaces.
- Apps having known/familiar layouts are used the most.
- Bright hues are appreciated, giving a positive vibe.
- Interactive, updated designs preferred.
- Amongst the host of emotions triggered by using such apps, positive emotions were seen to develop more than negative ones. (Sign of a positively developing society).
- A rise in unpleasant attitude and emotions was seen when use of such apps or internet in general was to be reduced (cut for a day, hypothetically). (This shows a worrying picture about the addiction of such apps).
- Study of such statistics reflects the use of excellent GUI practices and perfect building of interfaces.

ABBREVIATIONS AND ACRONYMS

HCI : Human Computer Interface

V. ACKNOWLEDGEMENT

We would to acknowledge our mentor Prof. Dr. Vinita Gaikwad for her guidance and support for this project and its research.

VI. REFERENCES

[1] The Essential Guide to User Interface Design - Wilbert O. Galitz
[2] *www.google.com*
[3] *www.youtube.com*

How can Color Affect the User in Defining What is Important?

Guided By: Dr. Vinita Gaikwad
Amar P. Srivastava, Priyanka C. Gaikwad, Surabhi Chavan, Yogija Prabhu

Abstract—**The recent introduction of Internet technology to general business has led to its wide-scale application. Consumers have been increasingly using the Internet to search for all the needed information on various websites. To facilitate a better understanding and usability researchers have shown the importance of establishing content-rich and user-friendly Websites. Scenarios of human–computer interaction help us to understand and to create computer systems and applications as artifacts of human activity—as things to learn from, as tools to use in one's work, as media for interacting with other people.**

Scenario-based design of information technology addresses five technical challenges: scenarios evoke reflection in the content of design work, helping developers coordinate design action and reflection. Scenarios are at once concrete and flexible, helping developers manage the fluidity of design situations. Scenarios afford multiple views of an interaction, diverse kinds and amounts of detailing, helping developers manage the many consequences entailed by any given design move. Scenarios can also be abstracted and categorized, helping designers to recognize, capture and reuse generalizations and to address the challenge that technical knowledge often lags the needs of technical design. Finally, scenarios promote work-oriented communication among stakeholders, helping to make design activities more accessible to the great variety of expertise that can contribute to design, and addressing the challenge that external constraints designers and clients face often distract attention from the needs and concerns of the people who will use the technology.

I. INTRODUCTION

Contemporary computers predominantly employ graphical user interfaces (GUIs) and color is a major component of the GUI. Color has a major impact on human-computer interaction: if not positive, then negative. "Color can be a powerful tool to improve the usefulness of an information display in a wide variety of areas if color is used properly. Conversely, the inappropriate use of color can seriously reduce the functionality of a display system.". Color is a major component in GUIs. Appropriate color use can aid user memory and facilitate the formation of effective mental models. However, ineffective use of color can degrade an application's performance and lessen user satisfaction. Due to these issues, we feel the effective use of color in computer interfaces is an important HCI topic that needs to be examined when considering interface design. Color impacts your user on many psychological and physiological levels. The color scheme can have a dramatic impact, which can be either positive or negative. It is a vital element of design that aids in creating ideas, convey messages, invoke feelings, and accentuate areas of interest. Since it affects the mood of viewers, henceforth, visual designers should treat the association of color as seriously as the design of graphics and layout.

II. PLAN OF ACTION

A. *Selecting Proper Survey Questions*

The team sat and brainstormed to chalk out a series of questions that would help in determining the sentiments of the people being surveyed. The final set consisted of about 15 closed ended questions.

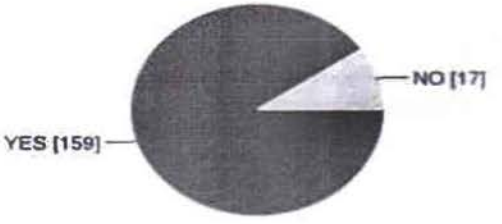
B. *Implemeting the Survey*

The questions were converted into a google survey and the link was passed around amongst the general people who use GUI applications on a daily basis. The questions being closed ended generated quick and precise responses from them. Over 170 people were surveyed. The results were turned into graphs to give a clear-cut idea of what users feel about the colors and color schemes used in GUI application.

III. OBSERVATION MODE

HIGHLIGHTING DETAILS

Do you think different colors are needed to highlight important details in a GUI?



1) H_0: R_i ~color highlights important details

2) H_1: R_i !~color highlights important details

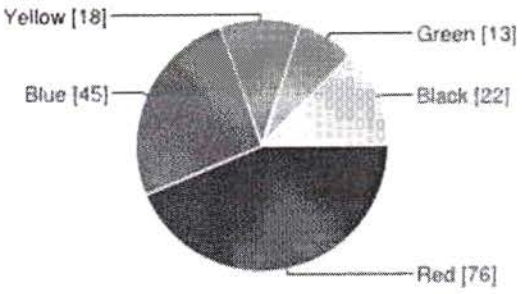
N=176
Y(%)=159/176=90%
N(%)=17/176=10%

Therefore, color does help in highlighting important details

3) As seen in the pie chart, an overwhelming number of respondents agree to it that different colors are duly needed to highlights important details in a GUI application.

EMPHASIZE APPLICATION

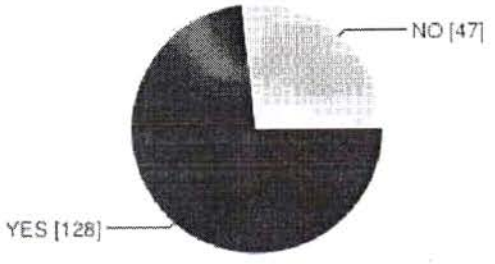
Which color according to you should be used to emphasize the details in an application?



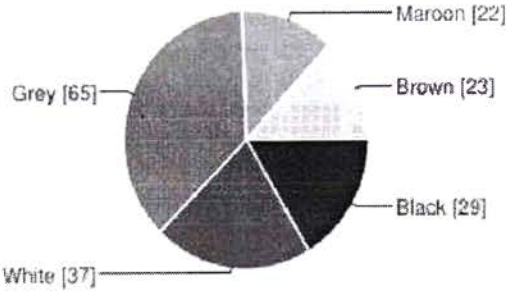
1) -Among the choices given to the respondents by us, the majority chose RED as the most effective color to highlight the important details in an application. Blue was not too far behind. And so we can conclude that people like to have a "Bright Color" to highlight the details in the application.

AGE/GENDER ROLE

Do you think age or gender play any role in liking the color of any GUI application?



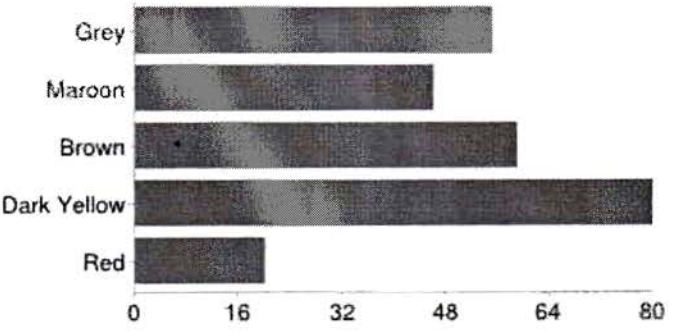
Which color according to you receives the least attention from the user?



1) -This question was put in order to see which color not to put the text in, in order for the user to not miss reading it. A majority of the respondents believed that "Grey" is the color that they would give their least attention to. A surprise was that the next in line was "White"!

AVOIDING COLORS

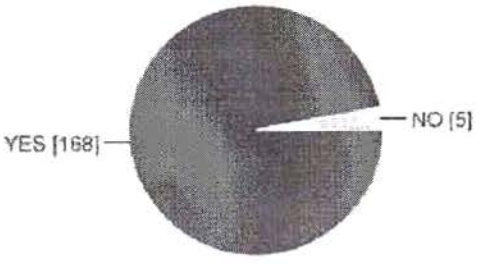
Which colors should be avoided in a GUI application according to you?



1) -This question was kind of similar to the previous question but in this we asked the respondents which color they would not like to see in an Application. And the result was that majority of the respondents that is over 30% voted for "Dark Yellow" to be avoided. This showed that people usually don't like muddy or too vibrant colors in the GUI applications.

SIGNIFICANT ROLE

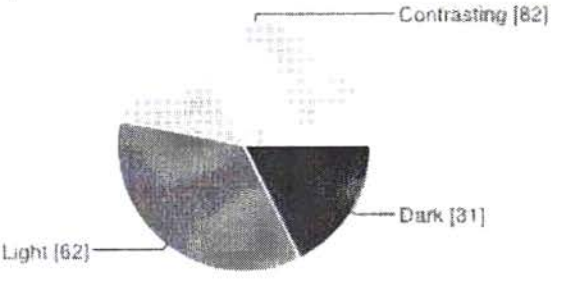
According to you does the background color play any significant role in a GUI application?



1) -The answer of this question was almost unanimous as over 97% of the respondents said that the background color plays an important role in defining a GUI application.

PREFERABLE COLOR SCHEME

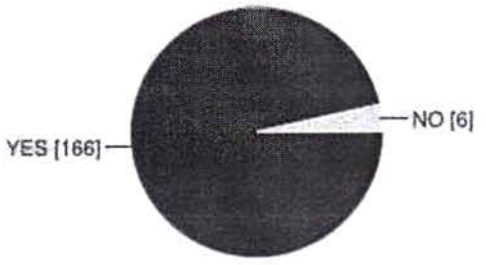
Which of the following color scheme would you generally prefer in a GUI application?



1) Here too the majority was quite readily visible. Around 50% of the respondents would like a "Contrasting" color scheme over Light or Dark color schemes. Dark was the least preferred color scheme amongst the three.

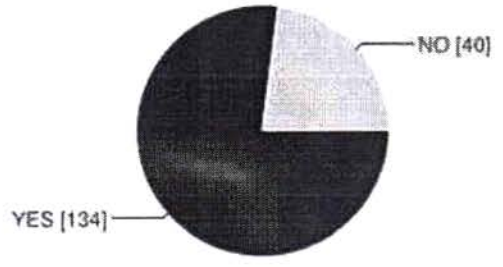
VISIBILITY OF THE CONTENT

According to you does the color scheme affect the visibility of the content?



TYPE OF USER

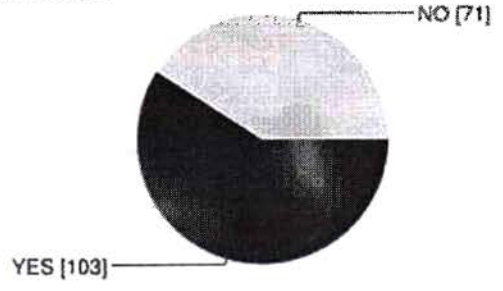
Do you think the color scheme of the GUI application depend on the type of the User?



1) -We have always wondered about this. Does the applications color scheme should match the genre of the application or on the type of the user who is going to use the application? Well, the answer is with us now. Over two thirds of the respondents felt that the color scheme should be such that it matches with the TYPE of the users of the application.

APPLICATION DEFINITION

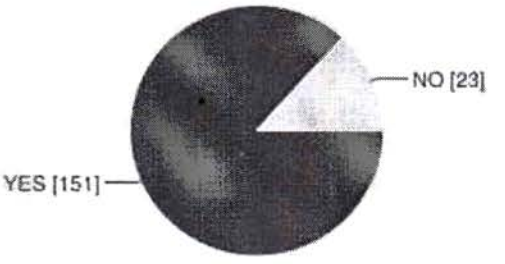
Does the color scheme of an application define the application itself?



1) -This question was put in, to see how big the effects of the color scheme and colors are over the application on the whole. And as we can see in the chart, around 60% of the respondents believed that the color scheme plays an important role in defining the entire application.

CUSTOMER ATTRACTION

According to you can color scheme be used to attract more customers to an E-Commerce Website?



-Since E-Commerce is a booming business these days, we thought of putting this question to see what the common people think about the colors and the color schemes used in the E-Commerce websites. And as we can see, over 85% of respondents felt that E-Commerce website owners can attract more customers by having an effective color scheme. This color scheme can be derived easily by going through the previous answers.

ATTRACTIVE APPLICATIONS

Which application that you have used according to you has the best color scheme?

1) -Since this was an open ended question, we received many different application names. Few of the more repeated one are listed below:

- Facebook
- Whatsapp
- Flipkart
- Skype

2) -All of these applications/websites have one thing in common, that is, they all have a simple two colored color scheme. Facebook,Flipkart and Skype have blue/white while Whatsapp has green/white color combination. So we can say that people usually tend to like application with a simple color scheme rather than having a multicolor scheme.

BEST COLOR SCHEME

What was the color scheme of that application?

1) -This was the last question of our survey and again was an open ended question. Some of the answers were:

- White-Blue
- White-Black
- Green-Blue

- Red-White-Black
- Black-Pink

2) -This again reiterated on the previous answer that users like a simple two or max three colored application the most. And 5) those colors should be contrasting and not of the similar type.

IV. CONCLUSION

1) The final conclusion that we arrived after doing this survey was that people tend to have a liking for bright colors when it comes to highlighting the details in an application, but they do not like the entire application to be very bright.
2) Designers should keep in mind the type of the users while choosing the color scheme for the application as it decides whether the application is easily accepted or not by them.
3) Designers should be vary of using dull colors such as "Grey", "Brown",etc which do not catch hole of the users attention. Also avoid too bright colors heavily in the application as they can in fact be repulsive to the user. If possible use a contrasting color scheme.
4) Keep in mind that the color scheme being chosen may define what your application is by the user.
   Having an efficient color layout/color scheme in your website can attract more customers and thus increase your profits.
6) Lastly, users generally prefer an application which has less colors in it. Two to three maximum colors in the color scheme. Any more than this and you may find that the user acceptance declining.

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How does Slang Affect the Thinking of an Average Student?

Guided By: Dr. Vinita Gaikwad
Ameya Korgaonkar, Arunima Bhol, Chintan Kinderkhedia,
Lorna Lopes , Shameeka Paradkar, Sana Shaikh, Sushant More

Abstract - **Our survey aimed to find out the transformative impact of using slang words on students. Based on the responses gathered from the participants of the survey our research shows that though slangs help in quick communication and disseminating information, they could have their negative impacts as well. Heavy use of texting or chatting could increase the tendency of the students to use non-standard or contracted forms of English in their academic environments like examinations or class works or research reports. Our research shows that students consider slang an informal language, they use it only to save time and improved speed of communication on social networks. However they would opt for an English-based dictionary to avoid slang. Agreeing to the bad effects of slang , we conclude that it would be widely used in future. To reduce its negative effect on the vocabulary we suggest that the use of slang should be restricted only to informal situations.**

I. INTRODUCTION

With the advent of technology and the easy availability of devices like the mobile phones, the laptops and other hand held devices, more and more students are immersing themselves in text messaging and online chatting. The slang words ,emoticons and other graphics are used to convey message and emotions on social networks.

Slang has been developed for shortening normal conversational words on social networks in order to sound like the original words thus saving time. However these new slang words, although with a similar phonetic effect, have different spelling which is a matter of concern when it comes to using the same words in formal environment.

Our Goal was to reach out to masses of students and try to understand why they use slang-words, how does it affect them, whether positively or negatively and the extent of its impact.

II. OBJECTIVES OF STUDY

A. Time and Speed of Communication

These are the most influential factors that promote the use of slang words in typed conversation on social networks. Students save time while typing the most-used and repetitive words. Students would prefer using English dictionary over using slang words that serves the same purpose of minimizing the time and improving communication speed.

B. Influence on vocabulary

It is agreeable that usage of slang-words definitely affects the vocabulary of almost all the students. Using slang words that are of different spelling confuses the students when they have to use the same words in academic work with correct spelling. Many a times the students unknowingly use the slang words where the actual word with correct spelling is expected. For example during examinations, while writing formal applications or letters. Not only does usage of slang spoil their vocabulary, the students tend to forget the correct grammatical syntax of constructing a sentence.

C. Social Discomfort

Students are comfortable on an average scale to use slang-words. Those who do not know the usage and/or meaning of particular slang words experience awkwardness in their friends circle. Students hesitate to ask the meaning of slang-words and often use indirect methods to find out the use and meaning. This suggests the social discomfort. A very small percentage does not hesitate to directly ask what those particular slangs mean. But students who find the need to fit in a particular group find it mandatory to know the slang words. Their tendency to use such words is high, inspire of the discomfort they face while using them. Some find the use of slang words unnecessary and use the proper English words to communicate via messages over the internet or the cell phones. But with the growing trend of using slang words, the number of these some students has reduced to very few.

Students also found socially discomforting to use slangs that differ geographically. Different slangs are popularly used in different locations. Students coming from different locations are comfortable in using the slangs that are popular in their area. Some students try to imitate the slangs used in different locations, say for instance some country. This has been on the rise since many of the students see American, British and Australian movies as well as T.V shows and are influenced by them.

D. Code System

Small percentage of students also use slang-words as a code amongst their friend circle to restrict the understanding of their conversation outside their group and protect the conversation from their parents who might oversee. This idea has given rise to more slang words. And many more are being coined every single day.

E. Informal Language

Usage of Slang is widely understood to be an informal language. Small percentage of students might mistake the use of slang-words as part of their formal conversation. In formal environments this habit is frowned upon. But the constant exposure to slang words has made its use in formal situations inevitable. The students tend to forget the difference between the slang words and proper English words, thereby forgetting or rather not realising the context to use either. Such informal words happen to naturally seep into formal conversations, both spoken as well as written. The students don't even realise this mistake easily. At times they never realise and go on repeating the same mistake elsewhere.

F. Creativity

Slang-words promote creativity amongst students. It encourages them to use more slang words. As mentioned above slang words are used for a number of reasons, right form saving time to passing a message in a coded form that is understood by few. This has prompted the creation of new slang words. The need for secrecy gave rise to slang words that are very different from the original words. Thus a person with no knowledge of slangs whatsoever would not be able to decipher the meaning of the message. However creating the slang-words are a work of few but which is widely used by many.

III. FORMS OF MESSAGING

The message content or the slangs are usually formed by shortening the English words and at times using them in combination with numbers to form a new slang word. For instance "before" is written as "b4". To form the slangs certain letters from the English words are dropped. For instance "beautiful" is written as "bful". Many a times slang words are formed by taking the initial of every word in the commonly used phrase or sentence. For instance LOL is "lots of love", BTW is "by the way".

While global slangs or abbreviations like LOL, BTW, IDK(I don't know), ROFL(Rolling on the floor laughing), BRB(be right back) are understood by many, there are many other abbreviations that are not quite clear in their meaning. These slangs may differ in context or location. Deciphering the meaning of such slangs then becomes a task. For instance "blvmot" stands for "believe me on that". When the recipient is not able to understand the message, the communication fails. Also in such situations where the recipient is not aware of the meaning of the slang, he/she may find it uncomfortable to even ask for its meaning, thinking the he/she will be mocked for not knowing the slang.

IV. SURVEY

Our survey was conducted amongst 103 people, majority of who were academic students usually in age group of 16-30.

We considered few objectives while framing questionnaire. Our findings are shown in the statistics placed below. Our questionnaire was distributed as online based Google doc forms.

Our survey revealed that the students are aware of the slang words being part of informal language. While some find it mandatory to use slang words while chatting, some don't find the need to use the slang words for saving time or for any other reason. The younger generation prefers the slang language to fit into a particular group or to have a particular image. The more mature crowd use a few slangs where necessary with the sole intension of increasing the communication speed. They use the globally understood abbreviations like ASAP, BTW etc. They also don't fancy using slang words for communication mainly because they find it inappropriate or unnecessary.

V. IMPACT

There is no doubt that using slangs will have impact on the way students talk and write. Thus there is both negative and positive impact as well. The impact of slangs on the language is of great concern. The negative impact being that the survey shows that using slang words profusely, affects a student's ability to differentiate between standard English words and slang words. Many a times the students are not aware the slangs words they use are slang and not standard English words. They have a high tendency of using it everywhere possible. It hampers their ability to learn more English words. Their spelling base is weakened. They become ignorant to the essential mechanics of writing like grammar, syntax, punctuation and capitalization. Students become less proficient in the use of language. The consistent use of slangs makes students lazy to write full words. The result is they prefer abbreviations wherever possible.

The use of internet slangs has a negative impact on bringing up good speakers and writers. This is because the students no longer follow the rules of the language and form their own new words, the meanings of which don't fall on the lines of English grammar. It affects their thinking capability as well. The students have a very limited vocabulary. And again that is under attack of the slangs. With not many words in their treasury the student doesn't think for words, as to which synonyms could be used where that befits the scenario.

The positive impact being that some believe that texting allows people to read and write and hence improves people's literacy.

Some participants believed that abbreviations have been in use since long. As such abbreviations are not a new language. Also in a typical message, less than 10% of the words are abbreviated, hence it shouldn't affect a person's vocabulary.

Some argue that because of slangs they can communicate well by managing the language or more importantly the number of

words in a message. Sometimes when there is a limit on the number of words that can be used in a message, students find the slangs helpful. The short abbreviated forms help them to communicate without having to sacrifice on the original content of the message.

A small percentage of the participants feel that slangs don't affect the vocabulary whatsoever. It is just a means of communication. They believe that though each generation or group has its set of slangs or jargons, English grammar has not changed. Most of the students have learned basic English in school. As such they should be able to distinguish between slang and correct English. An individual should be sensible enough to understand where to use slangs and where not to.

These students don't find it confusing to use Standard English when it comes to communicating in formal environments.

Considering that slang aids in quick communication and the fact that the language keeps on evolving over a period of time, we conclude saying that the future of slangs is not bleak. With the way the language has evolved so far, there are chances the few slang would get absorbed into the mainstream language and become a part of it just like the many words that have become part of the language over long periods of time. Having said that the students should watch the unbridled use of abbreviations and non-standard expressions and spellings in order to avoid the possible negative impact on their communication skills, both in terms of writing and speaking.

VI. STATISTICS

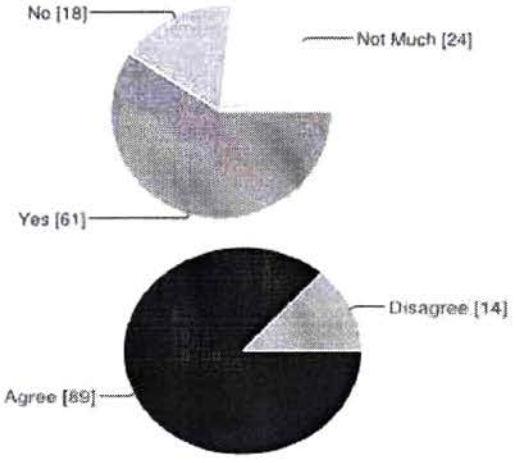

Fig-1:Statistic of Survey Objective : Saves Time & Improves Speed

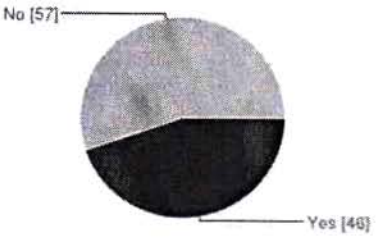

Fig-2: Statistic of Survey Objective : Code System

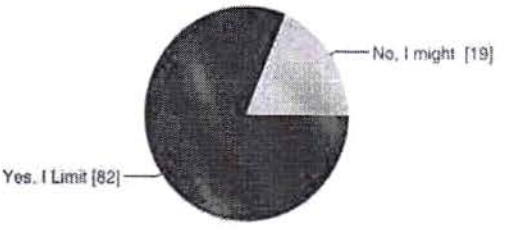

Fig-3:Statistic of Survey Objective : Informal

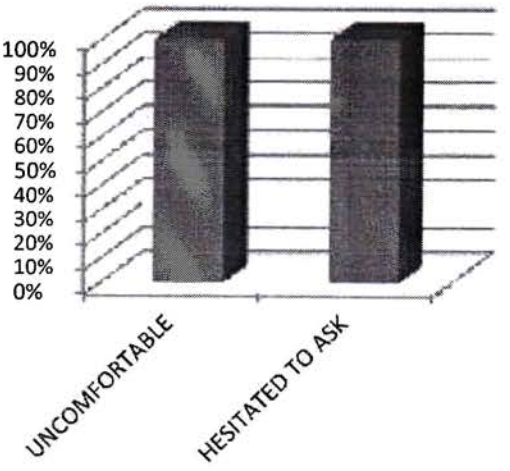

Fig-4: Statistic of Survey Objective :Social discomfort

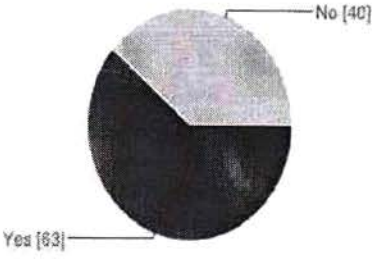

Fig-5:Statistic of Survey Objective : Creativity

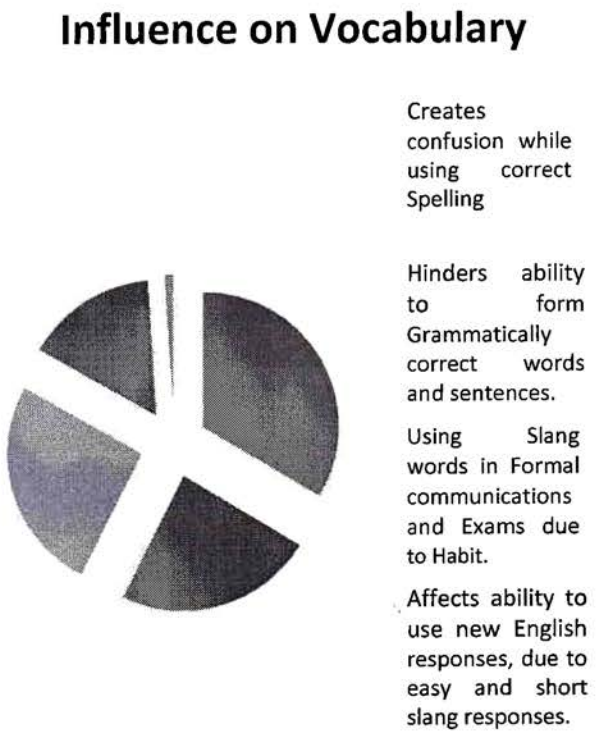

Fig-6:Statistic of Survey Objective : Influence on Vocabulary

VII. ACKNOWLEDGEMENT

We as a group would like to show our deepest admiration and gratitude to our respected Director I/c Dr. Vinita Gaikwad for her constant guidance, admirable teaching, and excellent support during the subject learning of HCI.

It is due to her undying enthusiasm and her invaluable inputs by which we can say this Project was a good learning experience. We would also like to extend our thanks to all those who helped us directly as well as indirectly in effective completion of this project.

VIII. REFERENCES

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Most Preferable GPS Voice (Male/Female) Navigation System

Guided By: Dr. Vinita Gaikwad
Jigar Mehta, Rahul Darji, Sanket Deshmukh, Viraj Dahitule

Abstract- **The paper provides a top-level perspective on how the global positioning system works, how its services are used, and delves into the most important technical and geopolitical factors affecting its long-term availability in an international setting. The primary goal of this study was to investigate if user generally Prefer Voice in GPS Navigation System. A secondary goal was to evaluate preference and consideration of the GPS voice navigation system better than Text/Graphics. We begin by reviewing the research done on usability of animated characters in a GUI application. Next, we presented our research question, objective and method for investigating the research questions. The result from questioner taken from 60 user reveal that the female voice navigation had effect produced for the user than the male voice, thereby supporting the goal of application aided with voice navigation, whereas mobile or car using it did not affect much each had its own view. We concluded by presenting and discussing the result of this investigation, making recommend-ations for future research and practices.**

Keywords— Global positioning system, GPS, navigation, satellite, GPS Voice Navigation System, Male/Female Voice Navigation System.

I. INTRODUCTION

"Where am I," "Where are you," "How do I get there and how long will it take?"

A Review on GPS Navigation System

The Global Positioning System (GPS) is a satellite-based navigation system made up of a network of 24 satellites placed into orbit by the U.S. Department of Defense. [1] Military actions were the original intent for GPS, however, in the 1980s,

the U.S. government decided to allow the GPS program to be used by civilians. Weather conditions do not affect the ability for GPS to work. The systems work 24/7 anywhere in the world. There are no subscription fees or setup charges to use GPS.

GPS devices may have capabilities such as:

- Maps, including street maps, displayed in human readable format via text or in a graphical format,
- Turn-by-turn navigation directions to a human in charge of a vehicle or vessel via text or speech,
- Directions fed directly to an autonomous vehicle such as a robotic probe,
- Traffic congestion maps (depicting either historical or real time data) and suggested alternative directions,
- Information on nearby amenities such as restaurants, fueling stations, and tourist attractions.

GPS may be able to answer:

- The roads or paths available,
- Traffic congestion and alternative routes,
- Roads or paths that might be taken to get to the destination,
- If some roads are busy (now or historically) the best route to take,
- The location of food, banks, hotels, fuel, airports or other places of interests,
- The shortest route between the two locations,
- The different options to drive on highway or back roads.

Voice Navigation

- The Voice Navigator was the first voice recognition device for command and control of a graphical user interface (Patent no. 5377303[1]). The system was originally designed for the Apple Macintosh Plus and released in 1989. [2] Subsequent versions were created for Microsoft Windows.

- The original system included both hardware and software. A software-only version was introduced in 1992 for computers with built-in microphone and adequate microprocessor (Mac IIsi, [3] Mac Quadra AV).

- The hardware consisted of a TMS320 digital signal processor, a Rockwell fax modem and a SCSI interface as well as a headset microphone.

The software consisted of Dragon Systems [4] (acquired by Nuance) speaker dependent, discrete utterance, voice recognition driver and Articulate Systems patented voice control technology.

- The software enabled voice control of any Macintosh application using context dependent synchronized grammars derived from the current processes and operating system data structures (menus, windows, controls) and events (mouse, key and Apple Events). The system recognized spoken utterances and posted corresponding system events.

- The system was designed to be extensible using a plug-in architecture (voice extensions) for custom functionality and included a software developer kit (SDK) for third-party applications.

II. RESEARCH WORK

A. Female Dominant

Many of the computerized voices we hear in our daily lives are female, from GPS devices and Apple's Siri to voicemail prompts and the automated phone system at your bank. Biology is one suggestion why this is the case -- a study published in the May 2003 edition of "Psychological Science" indicates that unborn children react when they hear their mother's voice, but not their father's. It was also found in World War II that a woman's voice stood out when giving a warning to male aviators. A few have even suggested that a computerized male voice would be too reminiscent of HAL 9000, the cool, emotionless and homicidal supercomputer from "2001: A Space Odyssey."

B. History of Voices

When spoken turn-by-turn directions were first offered on navigation systems manufacturers predominantly chose male voices, as a male voice was perceived as more competent and commanding more respect. However, as consumer confidence in the technology grew, the male voices seemed too commanding and manufacturers switched to female voices which are generally perceived as friendlier and more likable.

C. *Survey Says*

Real world data and customer feedback, suggest that female voices are preferred for navigation systems, and a scientific study presented at the 2009 International Conference on Intelligent Robots and Systems seems to back that up. When presented with male and female voices from both a robot and a disembodied voice, both males and females found the female voice to be more reliable in disembodied form -- just like the one that emanates from a vehicle's navigation system.

III. GOAL OF STUDY

One ambitious goal using GPS technology is the "Elimination of the Travel Diary" like Wolf and others expressed it in their paper for the Transportation Research Board (Wolf, et al, 2001). Ideally, not only the track of each trip, but also the travel mode and even the trip purpose should be detected automatically just by analyzing the tracking data. Looking at the results of Draijer and de Jong, need to be much improvement will be necessary to reach this goal.

The Term goal of this research is the design of animated effective interfaces, in particular ones that have a desirable behavioral impact on users for the application being designed.

Our goal in developing Maps is to provide users with the most comprehensive and accurate online maps in every country, and to share the features and benefits of Maps as widely as we can. The benefits of a voice recognition GPS — flexibility, accuracy and time to focus on driving — are fairly obvious, but the technology is not without its drawbacks. Many times, the directions are not always the fastest or easiest route when those specifications are not requested. The most difficult part of working with speech recognition is learning to communicate slowly enough and with enough enunciation that the GPS accurately understands what is being said.

Explore whether interaction with people Generally Prefer Voice In GPS Navigation System user is productive, as measured by asking about the problem faced by user while interacting with the application, quantity of spontaneous question asking, and user„s suggestion

Determine whether the usage Voice Navigation System reduces the work of Typing Destination uplifted user„s productivity, and what the implications are for designing such kind of a GUI application. Assess the overall usability of animated character GUI applications With respect to the second goal, user„s queries were compared when they were asked which and how the interaction of animated characters should be designed in any application needed.

In a comparison of using a male voice in selected devices versus throughout, it was predicted that selected devices should be covered that shares features in common with the whole application would be more effective in benefit for users to get task-appropriate questions during interaction of application. In particular, it was predicted that user would like large in size female voice navigation system (compared with male) but most users should interest for only female one. Although no differential impact occurred for general questions.

IV. RELATED TECHNOLOGY

LBS service indicates a wireless contents service that provides certain information based on the location change of the user. Developers of mobile handset have voluntarily tried to install LBS within their devices. However, LBS were originally developed by telecommunication companies and mobile contents providers. The main benefit of the system is the fact that the users don"t have to directly insert location as they move.

GPS positioning technology is one of important technologies that allow an easier excess of wireless internet service. However, in order to materialize LBS, there are more related technologies other than GPS and satellite based technologies. Within the mobile communication network, there exists a management mechanism in order to manage a mobility of a cell phone and there are many GPS LBS services based on the mechanism. Movements of LBS can be seen in three different

parts; Positioning technology, lay-administered platform and VI. RESULT location application.

Positioning Technology: Service provider can predict any location using GPS chip within wireless device. In this case, the positioning technology directly manages a calculation of location using received signal from satellite. Once the calculation is done, a variety of information can be received through mobile communication network. Depending on Mobile communication network or location information service, the system sometimes uses a single base station based information, rather than multiple base stations. Since mobile communication network, characteristically, constantly manages the mobility of cell phones, this positioning technology method can be a method of providing LBS without any additional position technology and any calculation from requests of location.

The accuracy of location estimation is at the maximum when the location was estimated using GPS and the matching satellite based location prediction method. On the other hand, a base station method has the lowest accuracy of predicting location since it only allows predicting a certain part of region rather than a coordinate. LBL service can be materialized using other methods other than what are currently shown. Within current mobile communication network, there exists a variety of end terminals that have different method of predicting location. Therefore, normal mobile communication companies combines GPS, A-GPS and a base station based method to provide LBS.

V. RESEARCH QUESTIONS

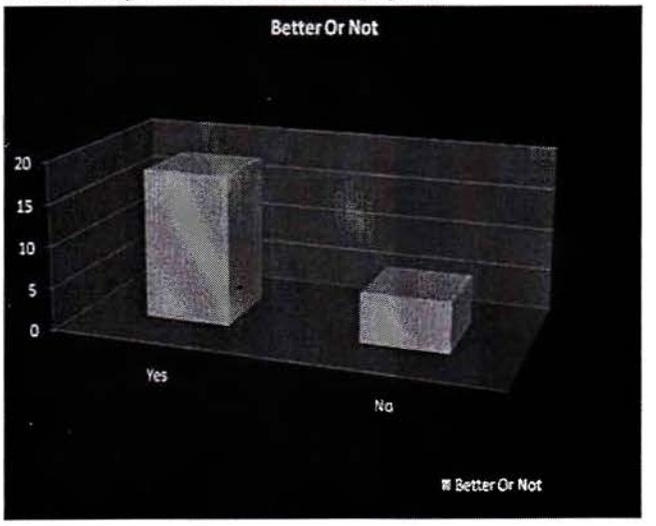
A. Personally Interviewed Questions:

Each participates were personally interviewed given the related information according to their knowledge about animated character

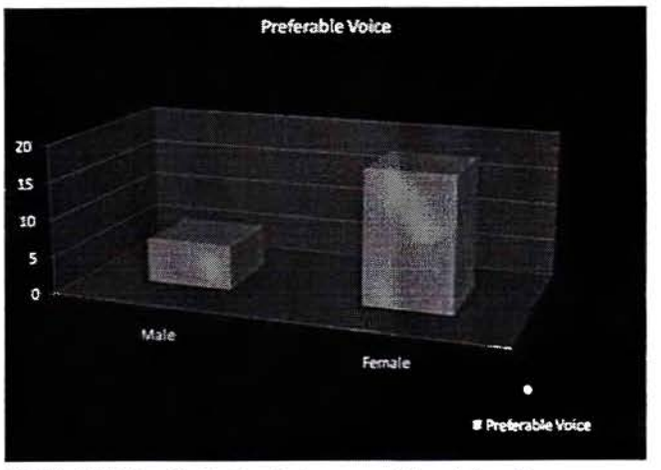
B. Questionnaire:

We had made a questionnaire which had questions related to GPS applications. Various questions were included to know what are the needs of the users, what they prefer in reality, what they don"t want. Questionnaire provides good written material for making surveys.The questionnaire sheets were distributed amongst the GPS users where they had to fill in the answers.They are more effective and less time consuming than personal interviews

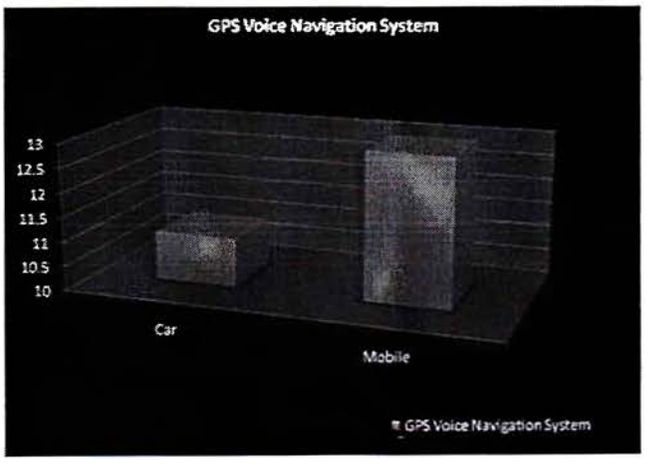
Is voice navigation is better than text/graphics?



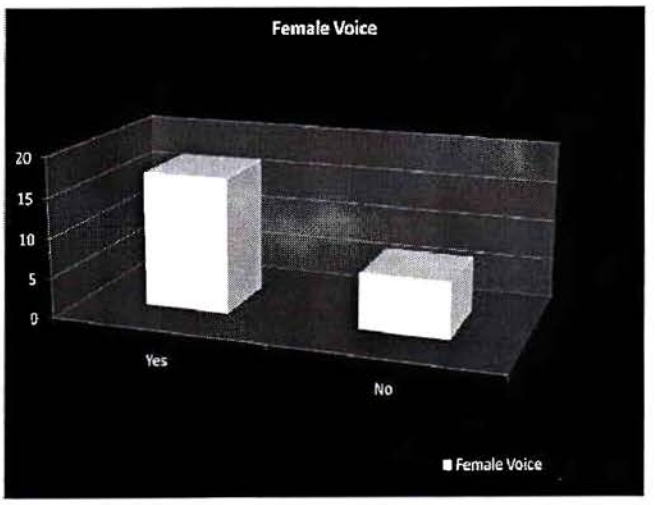
What do people generally prefer voice in GPS navigation?



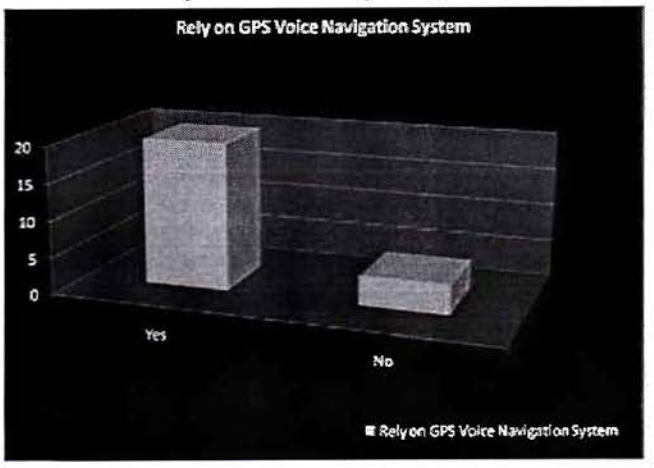
Which GPS Voice Navigation System you will use it from?



Do male like female voice and vice versa?



A car owner can rely on GPS voice navigation System?



VII. ONLINE RESEARCH

- One answer may lie in biology. Scientific studies have shown that people generally find women's voices more pleasing than men's.
- "It's much easier to find a female voice that everyone likes than a male voice that everyone likes," said Stanford University Professor Clifford Nass, author of "The Man Who Lied to His Laptop: What Machines Teach Us About Human Relationships." "It's a well-established phenomenon that the human brain is developed to like female voices."
- According to some sources, the use of female voices in navigation devices dates back to World War II, when women's voices were employed in airplane cockpits because they stood out among the male pilots. And telephone operators have traditionally been female, making people accustomed to getting assistance from a disembodied woman's voice.
- When automakers were first installing automated voice prompts in cars ("your door is ajar") decades ago, their consumer research found that people overwhelmingly preferred female voices to male ones, said Tim Bajarin, a Silicon Valley analyst and president of Creative Strategies Inc.
- This may explain why in almost all GPS navigation systems on the market, the default voice is female. One notable exception has been Germany, where BMW was forced to recall a female-voiced navigation system on its 5 Series cars in the late 1990s after being flooded with calls from German men saying they refused to take directions from a woman.
- "Cultural stereotypes run deep," said Nass, who details the BMW episode in his book.
- Most companies that produce automated voices hold auditions for voice actors and collect recordings of them speaking. Then they invite focus groups to listen to the recordings and rate the voices on how well they convey certain attributes: warmth, friendliness, competence and so on.
- "It's casting," Nass said.
- Nuance, a Massachusetts-based company that develops speech technologies for Ford vehicles' SYNC system, Amazon e-readers and other clients, creates both male and female voices. It's then up to the client to choose which voice, and gender, best fits their product, said chief creative officer Gary Clayton.
- "As these products become part of our everyday lives, there's a huge opportunity for personalization," added Brant Ward, the company's director of advanced speech design. "I could have an approximation of my wife's voice read me a text message in my car."
- Not necessarily, said Rebecca Zorach, director of the Social Media Project at the University of Chicago's Center for the Study of Gender and Sexuality.
- "I think they have to be understood in a broader context in which they're one small piece," she wrote in an e-mail to CNN. "Voices intended to convey authority (such as voice-over narration in films) tend to be male. So yes, probably these compliant female robot voices reinforce gender stereotypes, not just because they serve the user but because the technology itself is about communication and relationships (areas that women are presumed to be good at).
- When BMW introduced an in-car navigation system in Germany in the late 1990s, they followed the trend

of using a female voice for turn-by-turn prompts and instructions. The response from German male BMW owners was, however, overwhelmingly negative, and BMW ended up switching to a male voice. Traditional social values meant that a large number of German men felt uncomfortable with and less trusting of a female voice giving directions.

VIII. . FREQUENCY

The radio-frequency spectrum access issues facing GPS are both technically and politically complicated. By design, GPS operates at extremely low power, making it susceptible to certain kinds of interference if frequency spectrum use is not carefully controlled. GPS signals are transmitted in portions of the RF spectrum that are also very popular and in high demand for satellite communications services that generally produce the kind of interference most harmful to GPS.

Although GPS and communications services are quite synergistic in their applications, they are incompatible in their use of spectrum. GPS suffers from a tremendous disadvantage because of its low signal power. Some satellite communications service providers have already sought approval through the national and international regulatory processes for their signals to encroach on the GPS spectrum allocation, placing the viability and utility of GPS signals at serious risk. For technical reasons, moving the GPS signals or significantly boosting power from the satellites are not options.

IX. THE WAY FORWARD

For over 20 years, the GPS has benefited from service policies-

Consistently set forth and applied that enabled its flourishing worldwide exploitation. With such a stable policy foundation in place, including assured continuity of separate military and civil signal resources available free of direct user fees, several key objectives for GPS services suggest themselves. Working to satisfy these objectives will promote continued growth in satellite based Pt services, while expanding the myriad uses and international economic benefits derived from application of those services.

In order of priority, these objectives are as follows.

- Justifying use of and preserving adequate frequencyspectrum for GPS, its augmentations, and complementary space-based services, so they may operate freeof unintentional disruption and interference on a global basis.
- Continuing to improve the effectiveness and robustness of civil GPS as a commodity service used by the GPS system—or by other, unrelated broadcast technologies with strong backing in the legislature. And operated for the public good.
- Capitalizing on the technology investment by continuing to evolve national security, economic, and scientific applications of the technology for the benefit of U.S. and global infrastructures.
- Consistently applying a customer-oriented service philosophy along with a policy of open signal availability to encourage international acceptance of civil GPS and its augmentations as international standards, while promoting open-market competition in GPS equipment and applications.
- These suggestions represent essential elements for the continued successful evolution of this critical technology. Toward that end, national leaders must recognize and acknowledge the broader benefits this technology can make available to humanity and elevate GPS above the narrow interests of any particular department or constituency. Achieving that goal requires cultural change as well as executive and legislative commitment at the highest levels. The technology and vital infrastructure represented by satellite positioning and timing deserve that level of attention.

That the GPS record to date has been successful is unquestionable. It took about 25 years to turn an intriguing concept into an operational reality. That seems a long time in today"s rapidly changing environment. However, when one realizes that the operational reality is a revolutionary global life-changing technology, the 25 years spent getting here become inconsequential. Now, the question is how can that revolutionary capability be sustained, nurtured, protected, and improved to continue delivering its promise for future decades and the billions who will benefit from it?

X. DISCUSSION AND FUTURE WORK

Several exciting features and updates are in the pipeline for GPS Voice Navigation. The long-term goal is to create navigation for the ultimate driving experience and expand the application in different directions such as yachting, aeronautics, pedestrian navigation and many more.

With GPS established as an increasingly ubiquitous utility for precision timing and navigation, Parkinson has turned his attention to the future enhancement of the system. He foresees an era of GPS improvements including accuracy upgrades, "hardening" the system against signal interference, and adding redundancy in terms of satellite geometry and broadcast frequencies.

However, these improvements are not assured. Just as in the original development process, technological challenges and policy limitations within the funding organizations have a profound impact on the evolution of the GPS system. As an example, Parkinson pointed out the current regulatory wrangling surrounding the open frequency bands that could be

competition to the U.S. controlled GPS network has recently emerged in the form of the European Galileo project. Parkinson predicts that by 2010 there will be more than 50 million GPS users, including automobiles, ships, farm vehicles, aircraft, and virtually every other tracking and dispatch system in the world. Within just five years, every significant military system will depend on GPS in some way;

this reliance will continue to drive improvements in precision and jam-resistance. The world's most ubiquitous navigation and timing system will continue to evolve, in a process shaped both by advances in technology and by the shifting policy landscape of the federal government.

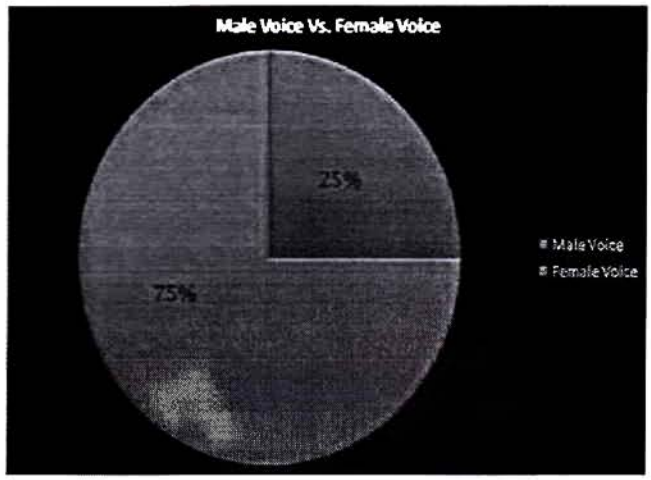
Our paper on Most Preferable GPS Voice (Male/Female)

Navigation System with Automation of Battle Tank Driving Using GPS Receiver can also be enhanced in a superior way in future. The following are some of the steps to be implemented for a new era of the unmanned tank in upcoming future

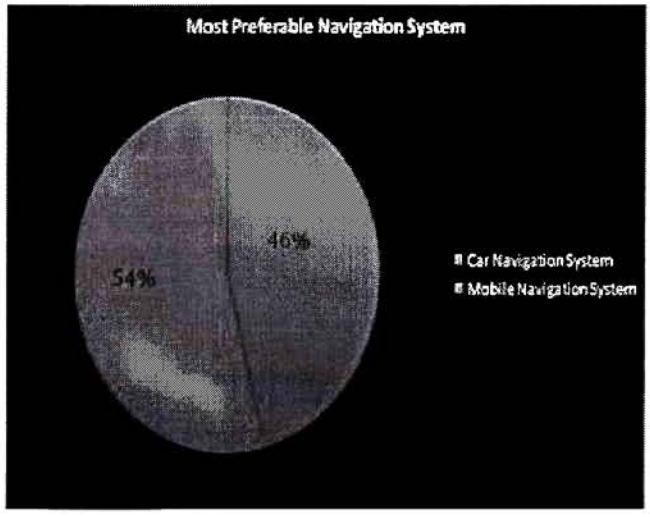
- Speed control of the tank
- Control of gear mechanism
- Automatic tracking.

XI. CONCLUSION

Male Voice Vs. Female Voice



Car Navigation System Vs. Mobile Navigation System



XII. ACKNOWLEDGMENT

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Productivity of User that are aided by Animated Character

Guided By: Dr. Vinita Gaikwad
Barkha Thakkar, Mary Samy, Namita Surve, Monica Sharma,
Vivekanand Manna, Kevin Chetti, Bhavna Sharma

Abstract- **Animated characters are common in user interfaces, but main questions is whether animated characters work in all situations and for all users. The primary goal of this study was to investigate if user could elicit proper response from the Information given by animated character used in GUI application. A secondary goal was to evaluate preference and consideration of animated character for replacement of any task in GUI application according to the user. We begin by reviewing the research done on usability of animated character in GUI application. Next, we presented our research question, objective and method for investigating the research questions. The result from questioner taken from 135 user revel that GUI application can be designed with animated character had effective productivity for the user, there by supporting the goal of application aided with animated character, whereas age or gender using it did not affect much each had its own view. We concluded by presenting and discussing the result of this investigation, making recommendation for future research and practice.**

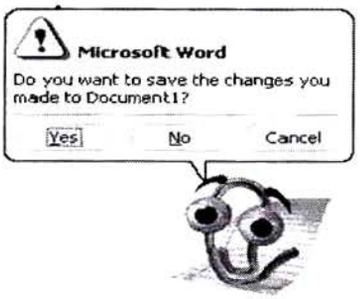
Keywords- Animated characters, GUI application, user interface, information, productivity.

I. INTRODUCTION

If you could ask for assistance from a user friendly, cute animated character, would that be an improvement over a plain simple help menu? Probably the answer, in most cases, is yes for two reasons. First, the animated character would allow you to select your questions rather than having to type them. Second, the smart aspect would improve the chance of the help system finding the information user want even if he do not state the query using the correct or most appropriate terms.

The art in this style of interface is an animated character. Does animated character speed up the process of the work? Would an animated character make GUI more appealing? Would the presence of an animated character make the GUI application or information you receive more persuasive? The answers to such questions have implications for designing a GUI with animated character for educational systems, entertainment systems, games, multimedia presentation and many other areas.

Character-based interfaces, particularly those with an animated character, are still relatively uncommon. Animated character which help the user and interact with user to perform tasks by giving possible match for any assistance contrast the traditional view of help menu as enabling tools for functional purposes.



Example 1

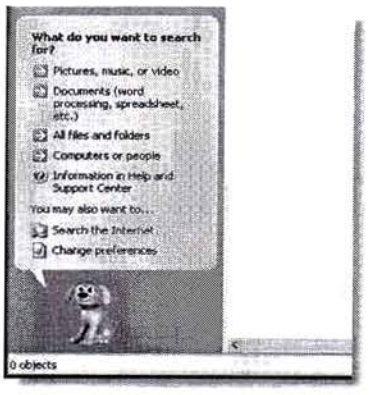
Many people believe that animated character interfaces have great potential to be beneficial in HCI for a number of reasons. Animated character could act as smart assistants, much like travel characters or investment advisors, aiding people in managing the ever-growing amount of information encountered today. Further, a interactive interface appears to be a more user friendly dialog style in which the user does not have to learn complex command structure and functionality.

An animated character interface could use human, cartoon or any animal form, 2D or 3D, color schemes, size, gestures, and posture, in addition to words, for conveying information and affect. The animated character seems to occupy a privileged position for conveying a great deal of information, including relatively subtle information, efficiently. Finally, animated character interfaces could make a computer more real world-like, engaging, entertaining, approachable, and understandable to the user, thus harboring potential to build trust and establish relationships with users, and make them feel more comfortable with computers.

These potential advantages are balanced by strong negatives. Animated character interfaces are viewed by some researchers as being impractical and inappropriate. Amount of Loading time taken, distraction during an important command, and computer hang problem after certain amount of time still fall far short of including any animated character in any GUI application.

More specifically, it has been proposed that animated character GUI application disempowered users by clouding issues such as who is responsible for such actions. Others feel that user interfaces are more beneficial when they clearly reflect the commands available to a user and present the objects that a user can act upon.

Furthermore, critics argue that animated character GUI application may mislead both users and designers, increase user anxiety, reduce user control, undermine user responsibility, and destroy a user's sense of accomplishment. Many current animated character GUI applications are viewed as being annoying, silly characters that hinder rather than enhance productivity.



Example 2

Although strong opinions have been voiced on both sides of this issue, relatively little careful empirical evaluation on GUI application with animated character has been resumed, and the results from this research have been contradictory or equivocal. Erickson states: "First it must be acknowledged that in spite of the popularity of the character metaphor, there is remarkably little research on how people react to character." Shneiderman has echoed the need for more study: "Please, please, please do your studies— whether they are controlled scientific experiments, usability studies, or simply observations, and get past the wishful thinking and be a scientist and report on real users doing real tasks with these systems."

In terms of design, the meatiest problem is developing criteria that will allow us to elect the appropriate set of traits for a given animated character— traits that can form coherent characters, provide useful cues to users, and give rise to all of the necessary and appropriate actions in a given context.

Our goal is to develop a structure to systematically evaluate and understand the animated character as a user interface paradigm. The present paper describes an experiment that explores two issues within this framework. The first is whether the degree to which an animated character has a measurable effect on users. One can think of interfaces with full fidelity animation or 3D images of human to more caricature-style characters to 2D cartoons of people or personified characters such as dogs or toasters.

The second issue is to what extent the nature of the task will influence a user's perception of an animated character. Some tasks might be more likely to induce a user to imbue the character with human-like qualities while other tasks might lead the user to view the character simply as a reference tool.

II. RESEARCH WORK

Research described in this section suggests that animated character have positive effects on user user-friendly and easy to use a GUI application, but this is not yet well established. Furthermore, it is likely that users in different target user groups will have different attitudes towards animated character, an issue which needs further research. This section describes previous related research into interactions between users and computers generally, before focusing on the potential advantages of animated character in particular, previous empirical studies of the effect of animated character in various field are summarized.

The animated character research suggests that animated character can serve numerous instructional functions. For instance, in a review of the research, Gulz (2004, p. 315) found that researchers claimed that animated character could enable „„increased motivation, increased sense of ease and comfort in a learning environment, stimulation of essential learning behaviors, increased smoothness of information and communication processes, fulfillment of need for personal relationships in learning, and gains in terms of memory, understanding and problem solving.""

In extending this investigation of the research to 2011, Veletsianos and Russell (2011) found that animated character were also expected to engage learners, provide systematic instruction, and engender realistic instructional approaches that aid learning and support both cognitive processing and metacognitive skills.

Empirical results supporting these claims however are ambiguous and often mixed (Gulz, 2004; Veletsianos & Russell, 2011), largely due to inconsistent experimental designs (Clark & Choi, 2005), varied animated character modalities (Baylor & Ryu, 2003), and a multiplicity of variables (e.g., character role, image, and voice) interacting in complex ways, thus rendering comparisons difficult (Louwerse, Graesser, Lu, & Mitchell, 2005).

Importantly, the animated character research centers on on-task contexts, such that much less of the research is focused on socio-cultural issues surrounding animated character implementations (Kim & Baylor, 2006). A smaller set of empirical studies seeks to understand character deployments that encompass non-task contexts.

Similar findings have been presented by Bickmore and Cassell (2005). In their study, introvert users liked the animated character more when it only talked about the task, while extroverts liked the animated character more when it used social dialogue.

Subsequently, Johnson et al. (2000) discuss the possibilities for increased social interaction offered by animated character in interactive environments. Users interacting face to face with animated character have the advantage of increased bandwidth of communication with the learning environment. Animated Character can express emotion through voice, facial expressions and body language, thus increasing the social presence experienced by the user. Engaging with animated character as social actors is hypothesized to be motivating to users and therefore have a positive effect on students' learning. Furthermore, an animated character interface is particularly appropriate for training applications where the animated character can demonstrate complex tasks in a simulated activity, navigate users around a virtual environment, or focus the users' attention on salient aspects of the task through gestures.

III. GOAL OF STUDY

In the present study, user was interviewed directly asking listed question as well as taking detail online survey about usage of animated character in GUI applications. This research was designed to:

Explore whether interaction with animated characters in the application used by user is productive, as measured by asking about the problem faced by user while interacting with the application, quantity of spontaneous question asking, and user's suggestion.

Determine whether the usage of animated characters uplifted user's productivity, and what the implications are for designing such kind of GUI application. Assess the overall usability of animated character GUI applications With respect to the second goal, user's queries were compared when they were asked which and how the interaction of animated characters should be designed in any application needed.

Following are basic objective covered in the questionnaire interviewed to the user:

1. Considering the basic information of user, knowing his/her view on need of Animated Character in GUI application.
2. Preference of user of having Animated Character or an alternate way to have in GUI application.
3. User Consideration in characteristic on Animated Character used in GUI application.
4. Problem faced by the user while using GUI application with Animated Character.
5. Productivity of user with GUI application having Animated Character.
6. User interaction speed with Animated Character in GUI.
7. Understanding how users interact with GUI application with Animated Characters in his/her field of work.
8. Future Scope & suggestion on use of Animated Character according to user.

IV. RELATED WORK

A few studies have revealed that animated characters are attention-grabbing and people make natural assumptions about the intelligence and abilities of those animated characters. King and Ohya (1996) found that a dynamic 3D character form was rated more than 2D form, including animal 3D forms, cartoons, and geometric shapes.

One common trend discovered in studies is that animated characters appear to command people's attention, both in positive and negative senses. Takeuchi and Nagao (1995) created animated style interaction systems that allowed corresponding animated character to be changes according to the user need. According to their metrics, the animations with a character present were more "successful."

Across two experiments they found that the presence of an animated character provided important extra automated cues, but that this also required more effort from the user interacting with the application and sometimes served as a distraction.

An influential body of related work is that of Nass and his colleagues. Their efforts focus on the study of "Computers as Social Actors." They have conducted a number of experiments that examined how people react to computer systems and applications that have certain personified characteristics (Nass, Isbister, & Lee, 2000; Nass, Steuer, & Tauber, 1994; Rickenberg & Reeves, 2000). Their chief finding is that people interact with and characterize computer systems in a social manner, much as they do with other people. Furthermore, they suggest that findings in the social psychology literature (e.g., individuals with similar personalities tend to get along better than do those with different personalities) apply even when one of the two user is a character in application.

The studies cited above, and others, suggest that productivity of application aided by animated character is more and variety of factors might influence how the animated character user like to have in his/her application.

V. RESEARCH QUESTIONS

A. Personally Interviewed Questions:

Each participates were personally interviewed given the related information according to their knowledge about animated character.

B. Online Survey Questions:

1) *Part - 1*: Basic information of user and his/her view on animated character.

2) *Part-2:* User liking which features of animated character.

3) *Part-3:* Check the usage of animated character user have came across.

4) *Part - 4:* Is animated character advantageous to the user.

5) *Part - 5:* Future Scope & suggestion from the user.

VI. METHOD

A. Participates:

Participants were interviewed with a list of basic question asked by our team mates where they were personally asked question giving an idea about animated character GUI application, with an idea of how they currently interact with any such liked of application. They were not told what kind of information animated character provided if any. Additional we had prepared detail questionnaire extending the basic one which we publish online to the various user. For participation of various users, students in college campus and classroom mate were approach mostly. Similarly for online survey facebook and whatsapp messaging approach was used. A total of 140 people (90 personal interview & 45 online survey; 64 females, 76 males; mean age = 28) took part in the study. Ethnicity distribution was as follows:

Academic students = 87%; non-academic = 13%. The questionnaire was made up of four parts: 1) Basic and general questions (No=8); 2) Characteristic and features of animated character (No=14); 3) Problem encounter due to animated character (No=6) 4) Productivity due to animated character (No=10) 5) Future scope and Suggestion (No=5). For participation in the study, participates were able to forgo fun-game round with the time spent in the interview and questionnaires, which took approximately 45 minutes.

B. Tasks:

One fundamental issue in the interviewing about animated character in GUI application is competence. It appears obvious that perceptions of animated character will be strongly influenced by the competence of the application participates have interacted with also affect the quality of the replies and suggestions made by participates. While a set of questions could examine how differing levels of competence affect user performance and impression, we chose to factor out competence as an influence in this study. If our questions uncover that people's performance is not enhanced and they dislike animated character even though the system is competent, then that is an important and strong result that other researchers and developers need to understand. To remove competence as a factor, we extended our questioner to online survey.

The online survey covered various detail question of animated character like its appearance and the task objectiveness variables because prior work and our study suggest they seemed likely participates to have an effect on the perception of animated character. Usefulness was evaluated via both the performance and satisfaction dimensions. We hypothesized that user reactions to the animated character would vary as a function of the objectiveness of task. A task that required the user to debate the merits of his or her opinion might lead the user to feel the animated character had more of a personality compared to a task in which the user made use of the animated character more as a reference tool. We also hypothesized that users might find the animated character to be more useful in its role as a reference source rather than as an entity that provides opinions. Finally, we expected that the more real-world like animated character appeared, the more likely the user might be to ascribe qualities such as personality and intelligence to the animated character, but objective productivity would likely not be affected by appearance.

C. Procedure and Design:

Participants were individually interviewed with basic set of questions with an initially giving basic idea about animated character used in GUI application. A participate was given basic idea about animated character aided GUI application that was identical for all participants. Participants then began with the first set of basic questions. The two set of questions were a basic set of questions and a productivity related set of questions.

The basic set of questions were chosen to be a type of creative, opinion-based task in which interacting with an animated character might be viewed as an opportunity to think more deeply about the task by discussing points of view about the importance of productivity.

The productivity based set of question was chosen to represent an opportunity to use an animated character primarily as a reference source rather than as an additional feature.

Further to understand detail view about participates online survey form was designed with five part each fulfilling the objective defined. Each of the interviewed participates where asked to fill in this online survey form. This survey also included input from participates for future scope and suggestion regarding usage of animated character in GUI applications.

After the participant did the basic questionnaire interview, an online survey was asked to be done further for which we send a link of form created on Google drive. Open ended question where designed in five different parts. Few question were extended by text field for input from participate side. For example, asking participate that has he/her has seen any animated character in and GUI application. If YES then

mention in which ways? In which participates can explain his interaction and suggestion he has experience till now. No part or question where made compulsory for participates. After submitting the form the data was saved in spreadsheet template in Google drive. Before submitting form participates had an open choice to change their view of any question if any. Finally when form was submitted participates were thank for giving their valuable input and time for this survey.

One questionnaire was in the done in the college campus with the participant giving introduction to the study topic, and a second questionnaire was in online, saving each questions and responses made by the participant. The second experimenter insured to get personal experience response using animated character in his/her relative field of work.

Additionally, two ways animated or just text based information delivery was liked by participate was also asked in survey. Preference of 2D or 3D animated character, preferred size of animated character used in application, age and gender of any like participate would be use to, colors scheme were also covered.

Although our basic questionnaire interview was the "objectiveness" of the studying the productivity nature of the animated character also was varied as a functional part of the application. There was a positive reply with participates for need of animated character in a GUI application which reflected need of it within any kind of application.

However, in the basic set of question the were selective like yes/no, level of ranking, select the options desire and even had few input selective question regarding the influenced or popular character according to the participant. Further, detail level of survey analyzed "characteristic" of the animated character and participate expect in the GUI application which he/she use.

We let participate think their view both in objective and subjective way because we were interested in getting participants' reactions to the level where they being real user give their current input as per the experience had till now and future scope with more betterment in GUI application with animated character. In future work we plan to systematically investigate reactive/proactive dimension.

D. Measures:

Both objective and subjective measures were used. One objective measure was, for the basic set of questions, whether participants gave their yes/no input as per the function of the animated character feedback. For the productive set of questions we measured level of usage and advantages participate achieved from animated character in their GUI application.

The primary subjective variables in the questionnaire were the responses to the individual items in the question and the answers to the questions posed by us. The questionnaire items used a five-point Likert scale (1 = least, 5 = most) that addressed a number of qualities of the animated character. The questions posed by us were open-ended and provided participants an opportunity to give their impressions about the animated character's personality, helpfulness, and productivity.

VII. RESULT

In the data analyses we found that the pursuing any academic course by participate did not have an effect, so in the interest of simplicity we will collapse across that factor in the presentation and discussion of the results.

A. Introductory response:

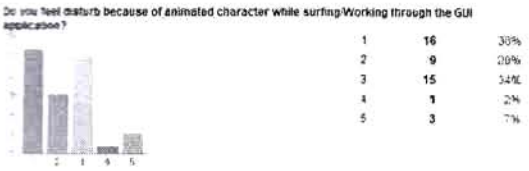
With respect to more objective measures, following Table shows that participants were more likely to change the need or requirement of an animated character in GUI application as same question was repeated three times in different format to understand that participate completely agree for having animated character in his/her GUI application.

TABLE I

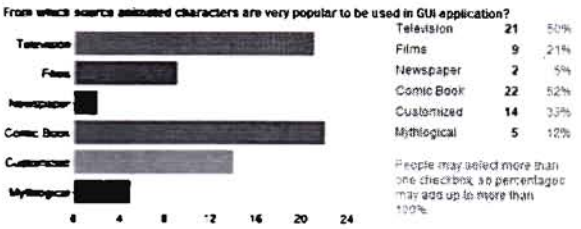
Age group	18-23	24-29	30-35	Above 36
Is Animated Character required in any GUI application?	80% yes	75% yes	60% yes	71% yes
Would you like GUI application with or without animated Character?	70% with	65% with	50% with	25% with
Do you think having animated character in GUI application is mandatory?	50% yes	40% yes	0% yes	0% yes

B. Interview& Online Survey response:

While participants made a number of interesting and insightful comments about the animated character in response to questions of online survey, a simple tally of responses commented to the animated character that again varied as a function of application.

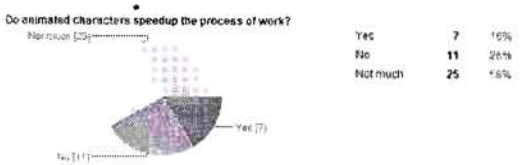


Virtually all participants found the animated character helpful in many ways. Participants were much less likely to consider the animated character to have a personality after answering the productive set of question compared to the basic introductory set of questions. This makes sense because the animated characters are merely feature with information on commands in the productive task. In the introductory (basic) task the animated character expressed its "opinions."



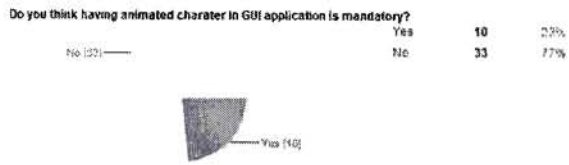
Finally, it is worth noting that in general the animated character was perceived as more intelligent after the basic introductory questions set than after the productivity questions set. At one level this seems odd because all answer about the animated character had been covered in knowing at basic introductory question level only.

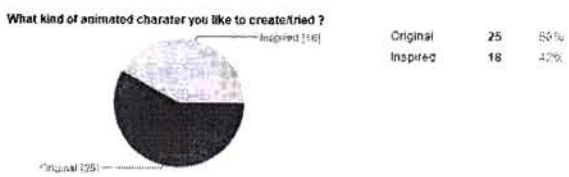
However, as demonstrated by some participants" comments, the animated character was perceived as very limited in the productive set of questions; participate just got to know about editing commands and probably little else. In the characteristic set of questions though it presumably gave the impression of having sufficiently deep knowledge about animated character such that participates could give feedback on the importance of various functions one can get from animated character. While some of the participants" responses to the animated character indicated that they disagreed with suggestions, they appeared to believe that the suggestions were only thoughtful and not functional.

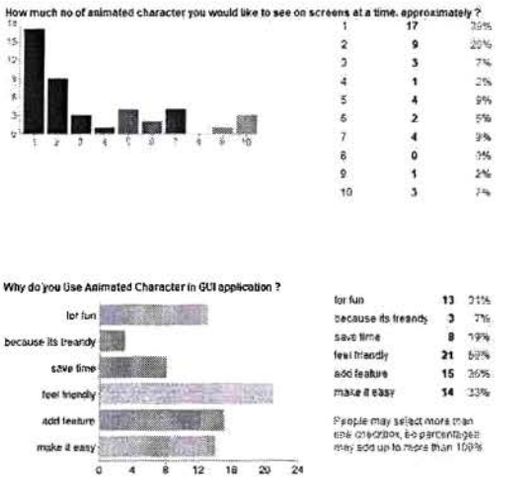


The animated character was rated more worthwhile and less intrusive after the productivity set of questions compared to the characteristic set of questions. These results make sense.

First of all as, till productive set of question most participants gained knowledge about animated character, thus making the animated character seem worthwhile. Second, the newly invited critique of participants" rankings just basic level of question could certainly have seemed intrusive. While group differences did not exist on most of the questionnaire items, it is interesting that for most items, the average response tended to be in the positive direction. Participants felt positively, on average, about the animated character.







VIII. DISCUSSIONS AND FUTURE WORK

The animated character's abilities and personality were discussed by a number of the participants. In the basic set of questions, we intentionally check the knowledge of participate about the animated character and its need in their application. Three participants explicitly mentioned the feature, one stating, when asked if the animated character had productivity, "Yes, respectful. It said, " [name] ", and "I agree with this."...I thought that was very funny. That was really cool."

Future variants of this study could include manipulating the information presented, such as the animated character giving faulty information or demonstrating expertise through specialized knowledge, altering persuasive strategies used by the animated character, altering the clarity of presentation, or alternating character-versus-user initiation of the conversation. Also, synthetic faces of increasing quality could be evaluated, ranging from low resolution texture mapping, through very high detailed animations, to pre-recorded videos of real humans. Subsequent studies should, based on the experiences gained, aim at identifying which dimensions are crucial to perceived realism. Ultimately, studies should also be designed to address the question to what degree realism is important, and which other dimensions are equally or even more important.

IX. CONCLUSION

Animated character GUI application might be one of the best application approaches ever devised. Or they might not. This paper presented the findings of this study conducted to evaluate the productivity of application aided by animated character on 140 different users. Use of animated characters in different GUI application seems to be an interactive way to meet user's needs through its potential automation way of interaction. However, the presence of an animated character may function as an additional feature of an application such as its graphical based appearance.

As stated above, Users rated the Human character within the GUI application more highly. In particular, they were more likely to want to use it again. Female were more likely to agree strongly that inspired character makes it more user friendly, while male were more likely to indicate that they thought an original character would be more innovative than inspired one. Popular Source from animated character where used had no significant effects upon the users' interactions with GUI application. However, colors scheme of the character suggest that girls were more inclined to attractive color scheme, whereas male were more likely to use natural and decent color scheme. The results of this study raise questions about varying patterns in different user interactions with animated character. Further research is required to gain an understanding of the ways in which animated character can be used positively within the specific context of as per the need of user cognitive skills and need.

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Thakur Institute of Management Studies, Career Development and Research was established in the year 2001 with a clear objective of providing quality technical education in tune with international standards and contemporary global requirements, offering 3 years postgraduate degree in Master of Computer Applications (MCA). The Institute is recognized by the AICTE norms and is affiliated to the University of Mumbai.

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