

Courtesy of Alisa Rhee, Ilene Chen, Monette Fung and Nia Ujamaa. Used with permission.

# **Enhancements to the Village to Support Computer Clubhouse Design Principles**

Ilene Chen  
Monette Fung  
Alisa Rhee  
Nia Ujamaa  
December 7, 2004

## The Computer Clubhouse Village

The Computer Clubhouse Village is an online repository for digital media used by Clubhouse members. The Village was developed not only to store the work of Clubhouse participants, but more importantly, to support and implement the principles in which the Clubhouse is designed. At the highest level, the Computer Clubhouse aims to encourage participants to “learn to express themselves fluently with new technology.”<sup>1</sup> Technological fluency supports the development of an individual by providing a medium in which to express and construct ideas with technological tools. The Clubhouse is designed to foster technological fluency by:

- Promoting activities which encourage youth to actively build or construct their own knowledge and to develop a relationship with new learning.
- Encouraging youth to explore motivations for learning and develop their interests and talents.
- Building a community in which participants learn to explore, experiment, and express themselves with the technology.
- Creating an environment of trust and respect such that individuals are free to explore their interests in a safe environment.<sup>2</sup>

The Village draws Clubhouse participants from all over the world into mutual learning experiences through collaborative learning activities; communication and design tools; and the showcase of individual’s projects and skills.

### Computer Clubhouse Challenges Bridged by the Village

The functional design of the Clubhouse Village reflects the larger design principles of the Computer Clubhouse. Despite spatial, temporal, conceptual and technological barriers that separate Clubhouse members, we believe the Village creates opportunities where members can learn from, work with, and collaborate in a virtual community that is conducive to learning. We believe that creativity is best developed in social settings which facilitate the exchanging of ideas. As Gerhard Fischer, director of Lifelong Learning and Design at the University of Colorado related, “Much human creativity arises from activities that take place in a context in which interaction (distributed over space, time, and with other people) and the artifacts that embody group knowledge are important

---

<sup>1</sup> Definition of technological fluency as defined in: Resnick, Mitchel and Natalie Rusk and Stina Cooke, “The Computer Clubhouse: Technological Fluency in the Inner City”, *High Technology and Low-Income Communities*. (Cambridge: MIT Press, 1998).

<sup>2</sup> These principles are described and taken from “The Computer Clubhouse: Technological Fluency in the Inner City.”

contributors to the process.”<sup>3</sup> The Village endeavors to overcome these barriers by supporting creative learning experiences that are not bounded by time, location, or the resources of one individual. In fact, these barriers provide an impetus for members to develop and practice self expression through digital media as members see each other as resources in learning experiences.

The Village provides opportunities to meet the design principles of the Computer Clubhouse that physical spaces cannot provide. For this assignment, we focused on areas in which a digital community could bridge the gap between physical and virtual space and the Computer Clubhouse design principles which the Village uniquely fills:

- Opportunities for self reflection and discovery of learning motivation.
- A sense of audience and contribution to a learning experience.
- An environment of trust and mutual learning.
- Accessibility and relevance for ethnically diverse audience

In light of these objectives, we analyzed functionality in the Village which may be expanded upon or incorporated. Specifically, we concentrated on activities which contribute to a sense of community and mutual learning among Clubhouse members around the world in the following ways:

- Support communication among users between different time zones.
- Support interaction of users with various native languages.
- Encourage collaborative design experiences.
- Encourage participation of younger members.

## Current Computer Clubhouse Village

The current Computer Clubhouse Village website<sup>4</sup> was launched in June 2004. There are five major sections to the website:

1. *Projects* - Users can search other member’s projects, add their own projects, and get ideas for new projects.
2. *People and Clubhouses* -Users can search and learn about other members and Clubhouses around the world.
3. *Software Studio* - Users can learn more about the Clubhouse software and tools.
4. *Talk* - Users can email, chat, or post to discussion boards.
5. *Topic Tree* - Users can learn more about the Computer Clubhouse’s principles and methods.

---

<sup>3</sup> Fischer, Gerhard, "Social Creativity: Turning Barriers into Opportunities for Collaborative Design." In F. deCindio, & D. Schuler (Eds.), *Proceedings of the Participatory Design Conference (PDC'04)*, 2004, University of Toronto, Canada, July, pp. 152-161.

<sup>4</sup> <http://village.computerclubhouse.org>

## Design Goals

The current Village website is a great online tool for the Computer Clubhouses. Launched only six months ago, already over three thousand Clubhouse members in fifteen countries across the globe have user accounts. Project galleries and emailing have already become popular features. In a meeting with Chris Garrity, Project Manager of the Village project, she voiced a concern that the discussion section and chatroom generate little traffic. When used to their full potential, the discussion section and chatroom facilitate communication and collaboration, which will help Clubhouse members across the globe not only learn in communities but also become a community of learners. We propose enhancements that would encourage more use of the chatroom and discussion boards. We hope to extend the existing website's structure to support the design principles of the Computer Clubhouse.

In our discussions of enhancements to the Village, we fashioned design goals which focus on encouraging interaction and the exchanging of ideas between users of all ages and languages and which also reflect the larger goals of the Computer Clubhouse:

- *Kid-friendly appearance.* The interfaces of the website appeal to users as young as ten years old. The content of the website incorporates colorful designs, animation, sound effects, simple text and multiple media which may draw the interest of children. Interfaces are designed with a simple, unobtrusive navigation system<sup>5</sup>.
- *Ease of collaboration.* Collaboration tools are designed to be fun and easy for users. The collaborative projects and tools make working together simple—not an impediment to the learning process.
- *Promotes interactions between individuals.* The website encourages Clubhouse members to communicate across spatial, temporal, conceptual and technological barriers, supporting a large community of learners as opposed to independent Clubhouses.
- *Promotes communication in ways that are “natural.”* Since Clubhouses are located all around the world, the website should not only support many languages but also facilitate communication between languages. Chatting and posting on discussion boards should be comfortable for non-English speaking users.
- *Appeals to a wide age range of youth.* Ages of Clubhouse members vary from ten to eighteen years old. The interface and content of the website reflects the usability and interests of users of both ends of the spectrum.
- *Cultural sensitivity.* Since Clubhouses exist all around the world in countries as different as Taiwan, Jordan and Panama, the website should be appealing to all cultures across the globe.

---

<sup>5</sup> Nielsen, Jakob (2002) Alertbox: Kids' Corner: Website Usability for Children. Retrieved December 6, 2004, from: <http://www.useit.com/alertbox/20020414.html>

## Constraints in the Design Process

Our design constraints are divided into two categories:

- *Original design constraints* - Constraints that limited the designers of the existing website. Having not been involved in the initial design process, we made assumptions about the design issues the original designers faced, such as low bandwidth and choice of vendors to create the site. Clubhouses in less technologically-equipped countries may have low bandwidth which limits what can be viewed and thus displayed on the website. In addition, some tools of the website, such as the search feature and discussion boards, are provided by third party vendors which limit the design of the interface. The customization of those tools is constrained to the flexibility of the vendors' design.
- *New design constraints* - Constraints that limit our recommendations. The new design constraints that we faced when developing recommendations for the Village website are current technology, time, limited website statistics and access to the original functional intentions of the current Village website designers. Our recommendations are limited by what can realistically be implemented with current technology. Having only a month to do this project, our design process was condensed and shortened, forcing us to narrow the scope of our project. With more time, we could have conducted more thorough research and tackled a broader range of problems. We had hoped to produce a data-driven project, but the website statistics that were given to us were also limited. Statistics couldn't tell us demographics of the users, length of time spent on different areas of the site, etc. We also did not know the design intentions of the original website (research, justifications, etc.) Despite these constraints, we did our best with the research, knowledge and tools that we had to make our recommendations.

## Design Process: How it evolved

Our original intent was to build a website for children that encourages community building and collaboration. Our first idea was to develop a virtual multi-user environment similar to *Tapped In*<sup>6</sup> and *Groove*<sup>7</sup>. Some features of this virtual recreational center would include instant messaging, club/chat rooms kids can set up and design, remote multi-player games and some collaborative tools like doodling and writing. When we realized what a huge undertaking this project would be, we narrowed the scope of the project. We thought of pen pal websites or collaborative art websites. We then decided to focus on the needs of the

---

<sup>6</sup> <http://tappedin.org/tappedin/>

<sup>7</sup> <http://www.groove.net/home/index.cfm>

Computer Clubhouse since it was an organization that we studied in class and whose principles and activities we supported. We knew that the Clubhouses encourages the collaboration between kids and adults in their own Clubhouses so we wanted to provide a way for the members to communicate and collaborate globally through the internet. When we discovered that such a website already exists, we decided to analyze the existing Village website and offer a few enhancements that would promote online communication and collaborations.

## Enhancements

The different areas we analyzed for enhancing communication and collaboration on the site were the *Talk* section (mainly the discussion boards and chat room), the projects, and the culture of the Village.

### *Talk area of the Village*

One of the main challenges with the Village is that there is relatively little member activity in the *Talk* area. This can be attributed to a number of factors, including time differences, varying language proficiencies, and comfort level with using different communication tools among users.

Since the site is designed to aid communication among geographically distributed users, asynchronous discussions is the most effective way for the 3,000+ users to correspond with one another across various time zones. There are certainly some threads that garner more views and responses than others (for example, the thread in the Clubhouse Chat area titled, "*I'm See, how are you?*" has 1,400 views as compared to most other threads that have only double-digit views), but more than half of the 28 available discussion areas have fewer than 20 posts.

Understandably, it is difficult to support users in 20 countries, speaking in almost as many languages, with the majority of users ranging in age from 10 to 18. While the Village is fairly well internationalized and supports a range of languages, most users are strictly English speakers. This limits their communication to discussion areas in English. Conversely, users who are literate in languages aside from English may be restrained to posting in areas where they can communicate in their language of choice comfortably. The use of colloquial English in some of the posts may be especially difficult for certain readers to understand if they are not native English speakers. The wide range in language proficiency is another matter with this age range: a 10-year-old will not have the same language capacity as an 18-year-old or even a 14-year-old.

In terms of being kid/user friendly, kids naturally find imagery and graphics appealing. While the Village maintains a gallery where students can post their work, the general interface of the site is not very visual, which may deter younger users from finding the site interesting. When it comes to the younger users, terminology is also a factor in appeal. For example, younger kids may not know

that the “Add thread” button adds a new discussion topic to the discussion board. Some of the short, non-descript titles in the discussion boards may also not generate interest because they do not mean anything to the user.

These variables also make communicating in the chat rooms a challenge. Synchronous discussions require users to be proficient at typing out their thoughts and ideas almost instantaneously to maintain a conversation. When users lack these skills, a meaningful discussion ensues with difficulty and can be highly discouraging to all participants in the chat room.

The following enhancements to the *Talk* area may address the aforementioned concerns and also support three of the four design and guiding principles of the site (most suggestions will actually fall under more than one principle):

1. *A sense of audience and contribution to a learning experience.*

- Use more descriptive and kid/user-friendly language, i.e., use the title, “3D models with Bryce” instead of simply, “Bryce”. (see Figure 1).
- Use more symbolic images and icons throughout the site, i.e., add a musical note to the folder icon for “Music Room”. (see Figure 2).

The screenshot shows a website interface with several sections:

- LITATE**: Includes links for "You have 0 new emails.", "Write an email.", and "View all Village Discussions".
- CHAT**: Includes a link for "Clubhouse Chat (popup window) (1)".
- Search**: A search bar with "by Author:" and a "GO" button.
- Recent Posts**: A list of recent posts, including "Check out this one" by Patricia Diaz and "Tell me more about your game. I don't think there's:" by Trevor Schroeder.
- Online right now**: Lists users "Na Ujamaa" and "michelle marquez".
- FEATURED DISCUSSIONS**: A table listing various discussion topics.
- MY DISCUSSIONS**: A section for user-specific discussions.

Discussion	Last Updated	Total Messages
How Do I Use the New Site?	2:49pm Oct 19, 2004	(32 posts/32 new)
Teen Summit 2004	10:49am Oct 12, 2004	(194 posts/184 new)
Music and Stuff	8:00pm Nov 16, 2004	(12 posts/1 new)
Carrerass y Universidades (Translation)	8:47am Nov 11, 2004	(8 posts/8 new)
Let's Talk about Technology	12:22pm Dec 2, 2004	(21 posts/18 new)
Girls Day Online Discussion	1:38pm Nov 24, 2004	(16 posts/16 new)
Going 3D with Bryce 3D	4:57pm Nov 2, 2004	
<a href="#">Resources for Girls</a>	11:17am Oct 28, 2004	(1 post)
<a href="#">SPONSORS FOR BBOY EVENT? Please read.</a>	6:37am Nov 10, 2004	(4 posts)

More kid friendly, catchy and descriptive discussion titles may attract users.

Figure 1.

COMPUTER CLUBHOUSE VILLAGE

Welcome to the New Village!

HOME PROJECTS PEOPLE & CLUBHOUSES SOFTWARE STUDIO TALK TOPIC TREE

MY STUFF

MY EMAIL  
You have 2 new emails.  
Write an email.

CHAT  
Clubhouse Chat (popup window)  
(0)

MY DISCUSSIONS

TALK

RECENT MESSAGES

- [Check out this one](#) Posted by Patricia Diaz
- [Tell me more about your game, I don't think there's:](#) Posted by Trevor Schroeder

Online right now:  
fisa, Utamas, zysp, ran, oral, Nistale, Rus, Anon, Smith, Show All

Discussion	Last Updated	Last Message From	Total Messages
Currently you have no subscriptions			

FEATURED DISCUSSIONS

Discussion	Last Updated	Last Message From	Total Messages
<a href="#">Help with New Village</a>	2:49pm Oct 19, 2004	Patricia Diaz	(32 posts/32 new)
<a href="#">Teen Summit 2004</a>	10:49am Oct 12, 2004	Christy Matte	(194 posts/164 new)
<a href="#">Music Room</a>	8:00pm Nov 16, 2004	Kala Naranjo	(12 posts/1 new)
<a href="#">Carreras y Universidades</a>	8:47am Nov 11, 2004	Patricia Diaz	(8 posts/8 new)
<a href="#">Tech Talk</a>	12:22pm Dec 2, 2004	Chris Garrity	(21 posts/18 new)
<a href="#">Girls Day Online Chat Sessions</a>	1:38pm Nov 24, 2004	Sandy Montz	(16 posts/16 new)
<a href="#">Ibexce</a>	4:57pm Nov 2, 2004	Aaron Isulu	
<a href="#">Resources for Girls</a>	11:17am Oct 28, 2004	Brenda Abanavos	(1 post)
<a href="#">SPONSORS FOR BOY EVENT? Please read.</a>	6:37am Nov 10, 2004	Ray Delgado	(4 posts)

Search the Village

ABOUT THE VILLAGE

More Icon Based Features

Figure 2.

## 2. An environment of trust and mutual learning.

- Add a list of users in the chat rooms on the home page to encourage other users to drop in (see Figure 3).



The screenshot shows the Safari browser window displaying the homepage of the Computer Village website. The browser's address bar shows the URL <http://village.computerclubhouse.org/clubhouse/home/>. The website's navigation bar is purple and contains links for HOME, PROJECTS, PEOPLE & CLUBHOUSES, SOFTWARE STUDIO, TALK, and TOPIC TREE. A 'MY STUFF' section is visible, showing user profiles for Nia Ujamaa and michelle marquez. A 'WHAT'S HAPPENING?' section lists recent topics, including 'New Topic page features', 'NetPainter-Great Online Collaborative Tool', and 'Second anniversary Intel Computer Clubhouse Dom Bosco Brazil'. A 'WHAT ARE PEOPLE TALKING ABOUT?' section lists discussions on 'Physical Environment of the Clubhouse', 'We want to make a quiz game...', and 'chatroom'. A 'PROJECTS OF THE DAY' section features a 'BOW WOW' project by Brenton Robinson and a 'presidents advice column' by Alyssa Montoya. A 'WHO IS CHATTING RIGHT NOW?' section is highlighted with a red circle and a red arrow pointing to a red text box that says 'Adding a section on the home page showing who is chatting may increase the number of youth using chat rooms.' The page also includes a search bar, 'ABOUT THE VILLAGE', and 'MENTOR CONNECTION' sections.

Figure 3.

- Simplify the GUI, i.e., if users have saved threads in their “My Discussions,” that section should be moved to the top of the page above the “Featured Discussions” for quick and easy access, (also see Figure 2).

### 3. Accessibility and relevance for ethnically diverse audience.

- Incorporate a text translator to submit a single post in different languages.
- Incorporate a speech-to-text translator so support students who want to participate in chat rooms (see Figure 4).

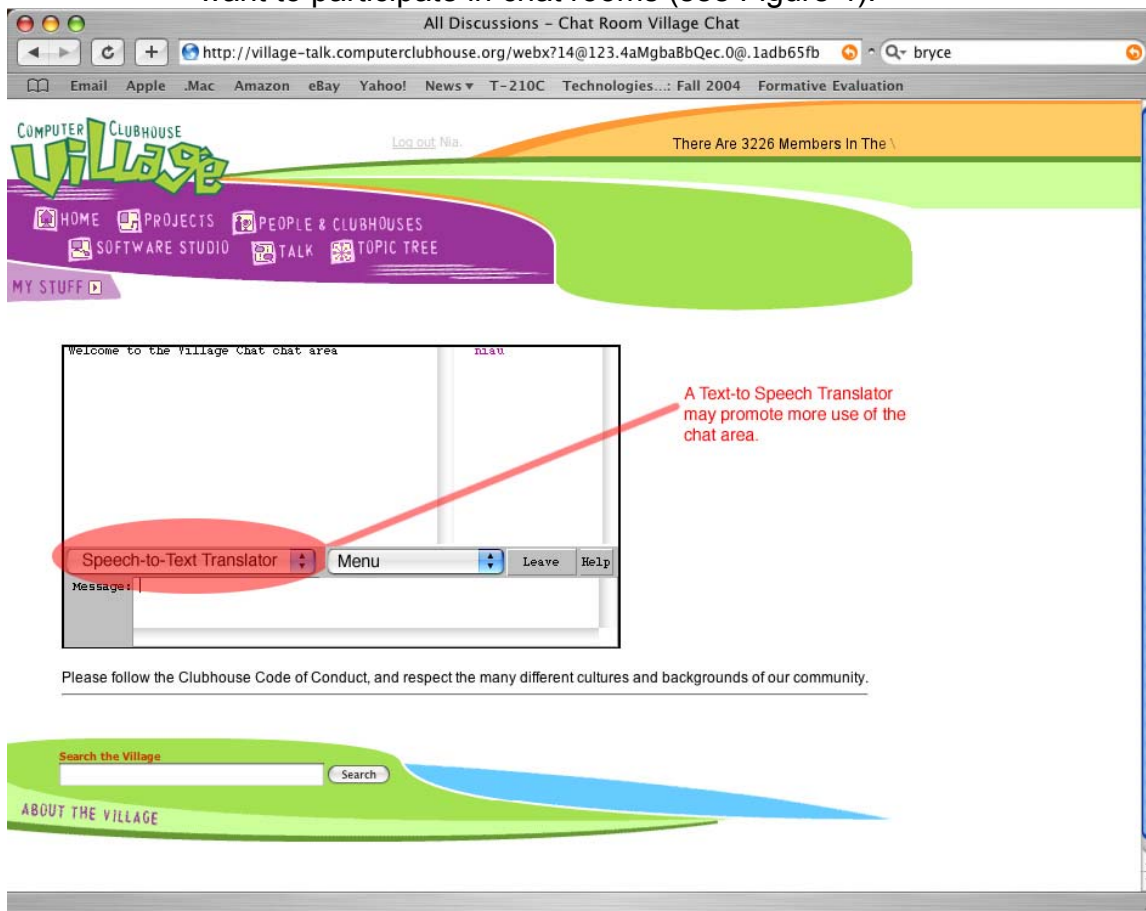


Figure 4.

### Projects on the Village

Collaboration across time and distance is always a challenge, and even within one geographic area and time zone it can be difficult to communicate in a natural way. One facet of collaboration is incentive, and without an incentive, users are less likely to combine their efforts with another person. Another component of collaboration is the means by which two people can work on something jointly.

The Village currently has a feature titled *Studio52 Challenge* where users can get ideas for projects. There is also a gallery where users can post their projects for others to see and comment on. However, these features do not necessarily encourage kids to work together. To support these features of the site and to promote collaboration among users and offer an opportunity for self

reflection as well as creating a sense of audience and contribution, we would like to suggest the following enhancements:

- Partnering Clubhouses to work on a Studio52 Challenge project titled *Studio52gether* (i.e., creating sister Clubhouse relationships).
- Have an online collaborative challenge such as a collaborative quilt project or a scavenger hunt.
- Have a Clubhouse focus of the month (i.e., learn about another culture).
- Initiate bimonthly art shows to be showcased in the gallery.

An additional feature that would further encourage collaboration is a tool where multiple users can mutually work on one project at the same time (see the groupware Groove, <http://www.groove.net>, for an example). This type of tool would give users in disjointed locations the means to exchange ideas and create something together, fostering communication across Clubhouses.

## Next Steps

In discussions with Chris, it was not clear how the Village was being used in Clubhouses around the world. Clubhouse coordinators are generally given an overview of the site when they first join the Clubhouse, but promoting use of the Village and distributing accounts to users was at the discretion of each Clubhouse staff. Most of our suggestions listed above require some type of evaluation in the form of a usability study with the students. By conducting a usability study as the next step, our suggestions will be much more informed by real data. See Appendix 1 for survey examples. Furthermore, continual promotion of the site and training for its users is recommended to support its use as an effective tool for communication and collaboration. We would suggest continually collecting feedback from users in order to determine the aspects of the site that are particularly appealing and to also determine what things should be addressed in order to better support users of the Village.

## Concluding Thoughts

Ultimately, we looked at specific ways in which the Village could meet the larger goals of the Computer Clubhouse. We hope that the enhancements discussed in this design brief will help members to develop themselves through learning experiences facilitated by the Village. Because of current technology and the expanse of the Computer Clubhouse network, we believe learning experiences will be enriched through the opportunities to be an active contributor to a learning community; the discovery of different cultures around the world; peer-to-peer or mentor relationships; and the realization of an individual's potential within a social network.

