

**The Computer Clubhouse Village:  
A virtual meeting place for an emerging community of learners**

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**ABSTRACT**

The Computer Clubhouse Network is an international affiliation of organizations that all have a common purpose: providing opportunities for youth from underserved communities to explore their own ideas and become more capable, creative and confident learners through the use of state-of-the-art technology. Clubhouse community members actively engage in learning-by-designing in an environment created to promote informal coalescing of groups around common interests. Having grown, with the support of Intel corporation, from a few to close to a hundred Clubhouses, spontaneously formed design teams no longer need to share the same physical space. The Computer Clubhouse Village provides a virtual extension of the Clubhouse and takes to a new level the emerging community of learners.

Becoming a virtual community with members from around the world brings new opportunities, as well as new challenges. As of 2004, there are Clubhouses in 20 different countries where more than a dozen languages are spoken. Even though the Network language is English, the Village strives to be a multilingual community where members are welcome to participate in a language they feel comfortable using. As we move to a third phase of development of the intranet, we will facilitate this interchange by providing an interface in languages other than English, whenever it is permitted. Translation is not only time consuming but also complex, considering regional variations in popular languages like Chinese and Spanish, and the lack of terminology in other languages for new technology and ideas. Bilingual members have become crucial to enable communication among those who speak only one language as they spontaneously translate for others, but there is a need for a concerted effort with professional translators as we move forward.

Adapting to the local culture and needs while preserving the Clubhouse guiding principles, is both a challenge and an opportunity. The Clubhouse learning approach has been developing since 1993, in conjunction with the MIT Media Lab, and continues to evolve as the Network grows and incorporates new technologies and new ways of thinking about them. It is based on ongoing research from several fields that revolve around the use of new technologies to enhance learning, taking into account the role of affect and motivation in the learning process, the importance of the social context, and the interplay between individual and community development.

The four guiding principles of the Clubhouse learning approach are: learning-by-designing, following your interests, building a community, and fostering an environment of respect and trust. Both the Network and the Village, reflect the same guiding principles that gave rise to the first Computer Clubhouse. In both cases, applying the principles to the specific needs of each community has been a process only possible with the participation of the local communities, facilitated by Community Based Organizations carefully selected to support each individual Clubhouse. The Network has been greatly enriched with the addition of people from diverse states and countries as they all bring their own perspective to the table. Youth are developing meaningful projects in their communities while at the same time sharing their projects and ideas with people outside of their communities who may provide feedback or even collaborate through virtual environments.

**Keywords:** Virtual learning environment, Creativity, Collaborative learning, Empowering, Networks, Learning environments.

*Understanding -like civilization, happiness, music, science  
and a host of other great endeavors-  
is not a state of being, but a manner of traveling.  
And the main goal of helping children learn  
is to find ways to show them that great road  
which has no final destination,  
and that manner of traveling  
in which the journey itself is the reward.  
Alan Kay<sup>1</sup>*

## POWERFUL IDEAS

Even more powerful than a powerful idea, is the application of powerful ideas to enhance the quality of daily life. Born as a collaboration between the MIT Media Lab and the Computer Museum (now part of the Museum of Science, Boston), the Computer Clubhouse has been a test bed for powerful ideas since it opened in 1993<sup>2</sup>. A place where these ideas are not only applied, but also provoked; encouraged; harnessed; reshaped; and ultimately, generated in an ascending spiral cycle where the imagination is the limit. Ideas that come from researchers in the academia, but also from Clubhouse coordinators, network staff, volunteer mentors, community based organizations, sponsors, and most importantly, youth.

For a couple of decades Seymour Papert has been calling our attention to the relationship between children, computers and powerful ideas [2]. His ideas have been embraced by many and tried out in several contexts but, as Papert himself recognizes, “many ideas are more easily loved than implemented” [3]. Right from the beginning, the Computer Clubhouse learning approach has been inspired by powerful ideas and is in constant revision to ensure that the practice truly reflects the guiding ideas.

In a time when many people were talking about youth access to computers, the Computer Clubhouse founders<sup>3</sup> were talking about access to youth’s own ideas and creative thinking. When many community technology centers were looking for ways to disseminate basic computer skills, at the Clubhouse the aim was, and continues to be, giving youth cutting-edge technology and mentoring them to become technologically fluent, so that they can use this technology to express themselves [4]. The motto low-threshold/high-ceiling has informed technology selection and provided members with non-intimidating resources that, while providing initial easy access, allow for complex and more interesting applications. When the internet was mostly reserved for researchers, Clubhouse youth were tinkering with 3D-worlds, virtual reality and an online community. While most people are talking about “information technologies”, Media Lab researchers are talking about “design technologies” and are committed to help other people design, create and invent [5]. At the Clubhouse, kids are encouraged to design, create and invent, to share their creations, and to reflect both on their own and their peers’ creations. The results are

<sup>1</sup> Powerful ideas need love too! 1995 [1]

<sup>2</sup> www.computerclubhouse.org

<sup>3</sup> The Computer Clubhouse was cofounded by Stina Cooke, Mitchel Resnick and Natalie Rusk.

quite amazing! Youth from whom society had very low expectations, become capable, creative and confident learners [6].

Much like Maria Montessori carefully designed the environment, about a hundred years ago, for underserved young children to explore their world and unveil their potential [7], the Clubhouse environment was purposely designed to promote specific interactions proven to enhance learning. Unlike typical computer rooms where computers are either in a classroom setting or around the room, in the Clubhouse, computers are arranged in clusters to promote collaboration. Chairs have wheels to allow members to easily move around in the room and there is a “green table” at the center to encourage idea sharing and collaborative activities.

One of the sought characteristics of Clubhouse learning is that it happens in a social context. Experience has shown that kids enjoy all kinds of interactions around learning. Even though they can choose to work on their own, youth frequently share several aspects of the creative process. Once a kid has an idea, s/he can go right on to implementing it or may discuss it and reshape it with others interested in the same idea. Implementation can follow similar roads. Many Clubhouse projects are complex and require collaboration. The fact that the project is socially meaningful and relevant in the kid’s culture is a hallmark of the way projects are generated at the Clubhouse in the first place. At the other end, sharing a draft or a finished product is not only enjoyable but proves to raise the quality bar and enhance the overall learning experience [8]. Drawing the attention of others to their work and seeing it exhibited has a positive impact on confidence and self-esteem.

It is easy to misinterpret the open environment, flexibility, lack of curriculum and drop-in hours of the Computer Clubhouse as lack of structure. It is not the case that Clubhouses are unstructured, but it is fair to say that they have a different kind of structure, one that is based on a combination of freedom and support [9]. Mentoring is at the core of the Clubhouse learning approach and provides a solid support structure to promote active engagement in learning-by-design without an imposed agenda. Even though there are official volunteers called mentors, mentoring also happens at other levels. Peer-to-peer mentoring occurs spontaneously, Clubhouse managers or coordinators mentor kids and volunteers, network staff mentor coordinators and it is not unusual for a kid to be mentoring an adult. Support also comes in the form of materials designed to spark inquisitive minds.

In the Clubhouse everybody learns and enjoys doing so. Moreover, the Clubhouse culture encourages learning to learn and learning about learning. Given the characteristics of the Clubhouse environment, this learning often occurs in groups and those groups constantly form and dissolve. A community of learners is ever emerging in the Clubhouse.

## FROM CLUBHOUSE TO NETWORK

The Computer Clubhouse was not born with a vision of global expansion, but rather focused on the local community surrounding its original home at the Computer Museum in Boston. However, soon after opening, from around the corner and around the world came requests for help opening new Clubhouses. The idea of networking was not alien, since the

Clubhouse started as a partnership between the Museum and the Media Lab, and soon had allies in the community and the private sector. For several years, though, it was a small network.

In the past three years, with the support of Intel Corporation, the Network has grown to 89 Clubhouses scattered in 16 states across the United States and 20 countries in all habitable continents. Throughout its rapid expansion, the Computer Clubhouse Network has let the original powerful ideas guide the process<sup>4</sup>. The Clubhouse learning approach is based on ongoing research from the fields of education, developmental and social psychology, cognitive science, and youth development around the use of new technologies to enhance learning. It takes into account the role of affect and motivation in the learning process, the importance of the social context, and the interplay between individual and community development.

The Network has been developing using the same core principles that guided the development of the Clubhouse [10]:

- Learning-by-designing.
- Following your interests.
- Cultivating an emergent community of learners.
- Fostering an environment of respect and trust.

A new Clubhouse is to the Network as a member is to the Clubhouse. Like members, new Clubhouses are encouraged to explore their own ideas and are treated with respect and trust. Likewise, mentoring in the Clubhouse learning approach is done with the hope of achieving fluency that ultimately leads to self-expression. A geographic liaison from the network staff serves as a mentor to his/her region Clubhouses.

Key to the process, has been the idea that every Clubhouse needs to be hosted by a Community Based Organization with experience in the local community, and that the Network is an affiliation of organizations committed to the same purpose: providing opportunities for youth from underserved communities to explore their own ideas and become more capable, creative and confident learners through the use of state-of-the-art technology.

The Clubhouse learning approach has evolved as the Network grows and incorporates new technologies and new ways of thinking about them. Adapting to the local culture and needs while preserving the Clubhouse guiding principles, is both a challenge and an opportunity. The Network has been greatly enriched with the addition of people from diverse states and countries as they all bring their own perspective to the table. New mediums have been developed to allow the principles to flourish under the new circumstances.

## THE COMPUTER CLUBHOUSE VILLAGE

Having grown in the advent of the internet as an ubiquitous tool, the Clubhouse Network has enjoyed what visionaries dreamed about thirty years ago: access to people and up-to-date resources regardless of physical location [1]. Spontaneously formed design teams no longer need to share the same physical space, and finding someone who shares your specific interests becomes ever more likely. The Computer Clubhouse intranet,

<sup>4</sup> Gail Breslow, Clubhouse Network Director since 1995, has helped create a solid foundation for the Clubhouse Network.

known as the Village, provides a virtual extension of the Clubhouse environment and takes to a new level the emerging community of learners.

The current Village was developed with the following principles in mind<sup>5</sup>:

- Support and enhance youth creativity by sparking the design of useful things and sharing of design motivations, processes, and results.
- Build on the physical and cultural characteristics of Clubhouses so that the online experience enhances and extends the productive and fun ways that youth currently interact today.
- Reflect the values, aesthetic preferences, and interaction styles used by members and Clubhouse staff.
- Foster communication and creation of personal relationships.
- Provide recognized value and enhanced capabilities to staff members by equipping them with ways to share ideas, simplify tasks, and spend less time burdened by administrative overhead.
- Be extensible to support new kinds of member activities, youth/staff interactions, and Clubhouse management needs.
- Clearly represent the Clubhouse culture to new Clubhouses and members and facilitate rapid adoption of all that makes Clubhouses special.

“Walking” into the Village, the visitor first encounters a sample of original work posted by members, a link to a featured member and his/her Clubhouse, local and general announcements and project ideas. There are also virtual walls to hang original work, and rooms for Clubhouse videos, tunes and voices. In addition to these options are the messages, discussions and tools for everyone, and a staff section. Unlike other online communities, the Village is more than a place for information exchange. It allows for participants not only to communicate, but also to design, create, invent in a collaborative environment.



<sup>5</sup> These principles were devised by a task force with representatives from the Clubhouse Network at the Museum of Science, MIT and Intel.

Many visitors come to the Village for inspiration. Listening and seeing what others are doing incites them to work on their own projects. Some may build on a posted project, some may develop a new idea using a technique shared by a peer, some may join forces and work together to expand a project. Often an idea travels from Clubhouse to Clubhouse and a new style is developed.

As important as sharing the finished product, it is sharing the creative process. Both are promoted in the Village. Members are encouraged to comment on each other's projects and to reflect on their learning process. Comments windows were added everywhere to facilitate discussion and feedback.

The Village has served, for over a year, as a medium for an emerging community of learners to exist and evolve. As the Clubhouse, it is a catalyst for people to learn from each other. It has also served as an object to think about those communities and to better understand their needs, opportunities and challenges.

### LOOKING TO THE FUTURE

Using the current Village as a prototype and applying lessons learned from it, a task force with representatives from the Clubhouse Network at the Museum of Science and the MIT Media Laboratory is currently working on the development of a new Village for the Computer Clubhouse Network.

Having Clubhouses in several continents means, among other things, having a myriad of languages and cultures<sup>6</sup>. Even though the Network language is English, the Village strives to be a multilingual community where members are welcome to participate in a language they feel comfortable using. As we move to the next phase of development of our intranet, we will facilitate this interchange by providing an interface in languages other than English whenever possible. This will allow participants to see the same content, while navigating in their own language. Most of the "multilingual" sites up on the web are no more than mirror sites in alternative languages. The challenge of a truly multilingual audience is to find virtual meeting spaces for people using diverse languages, just like in the Village green of a multilingual town. We are using common icons familiar to multiple cultures and to rely on them as much as possible in place of text. In the cases where graphics do not suffice, written text in international languages -as opposed to local variations or slang - will be preferred. The interface, of course, is just the beginning. It will be important to foster a multilingual culture, where people feel compelled to try to communicate beyond language barriers.

For the document library, translated versions of papers, training materials, samples, templates, forms, etc. are the ideal solution. Translation is not only time consuming but also complex, taking into account regional variations in popular languages like Spanish and the lack of terminology in other languages for new

technology and ideas. In our current Village, bilingual members have become key players to enable communication among those who speak only one language as they spontaneously translate for others; for the new Village, we are joining efforts with a team of professional translators.

The best way to ensure that all views are represented is to invite everybody to participate. The Village is not a finished product to be developed by experts and delivered concluded. On one hand, the outcome sought is a modular, extensible, flexible system that will be created and recreated on an ongoing basis with participation from the Network. On the other hand, even the development of that system will be through an iterative process constantly informed by youth and network staff. This should insure that the Clubhouse spirit remains alive as the Computer Clubhouse Network continues empowering underserved youth around the world.

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<sup>6</sup> There are currently Clubhouses in 20 different countries where more than a dozen languages are spoken. Official languages in those countries are: Arabic, Danish, Dutch, English, German, Hebrew, Hindi, Kannada, Mandarin (traditional and simplified), Portuguese, Spanish and Tagalog.