
A Place to Be Your Best: Youth Outcomes in the Computer Clubhouse

Prepared for The Computer Clubhouse Network
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Contents

Contents.....	2
Executive Summary.....	3
Introduction.....	5
The Clubhouse Model.....	6
Methods.....	8
Youth Impact Survey.....	8
Network Documentation.....	9
Interviews.....	9
Training Observation.....	9
Clubhouse Site Visits.....	9
Review of Relevant Research Studies.....	9
Analysis.....	10
Notes on Quotations and Sources.....	10
21st Century Skills.....	11
Authentic Problem Solving.....	11
Creative Production.....	17
Communicating in New Ways.....	20
Working with Others.....	23
Technological Fluency.....	31
Creating New Content and Products.....	32
Participation and Engagement.....	34
Sharing Creations Openly.....	38
Learning Technology Collaboratively.....	39
Linking Technology, Identity, and Development.....	41
Focusing on Projects.....	46
Accessing New Pathways.....	51
Orienting to the Future.....	51
Engaging with School.....	54
Identifying a Professional Path.....	57
Commitment to Community and Service.....	59
Pride and Service Within the Clubhouse.....	59
Service Beyond the Clubhouse Walls.....	62
Youth Development Processes in the Clubhouse.....	66
Trajectories of Greater Participation.....	67
Charting Personal Progress.....	68
Quality of Social Life in the Clubhouse.....	69
Identity in the Clubhouse Community.....	71
Broader Connections to the Greater Community.....	75
Mentoring in Building Clubhouse Community.....	77
Conclusion.....	83
References.....	85

Executive Summary

Since 2004, the Center for Technology in Learning at SRI International in Menlo Park, California, has been conducting quantitative assessments of the effect of Computer Clubhouse participation on youth members, particularly on their socioemotional attitudes, academic attitudes, and technology use. To extend this analysis to a broader range of outcomes and provide a rich look at the environment in which these outcomes develop, SRI recently conducted a qualitative study drawing on the large body of documentation gathered over several years by the Clubhouse Network and supplementing this with site visits to Clubhouses and interviews with staff from around the world. The resulting analysis, combining quantitative and qualitative findings, provides descriptions of how the types of activities, relationships, and experiences members have in the Clubhouse can promote the impacts we identify. SRI's findings show three broad types of behavioral outcomes for Clubhouse members: their use of 21st century skills, including technological fluency; their capacity to follow pathways to success; and their commitment to community and service.

Our first broad set of findings indicate that members' capabilities develop across a range of 21st century skills, including problem solving, creative production, effective communication, collaboration, and use of technological tools. In the Clubhouse environment, members put a wide array of useful capabilities to work as part of their daily activities, creating experiences that lend themselves to use in other practical situations and forming foundations for skillful, adaptive, and appropriate behaviors elsewhere. The Clubhouse model of youth development stresses the authentic aspects of members' activities: solving problems that are personally meaningful; sharing creative products within a community of peers and mentors for constructive feedback; expressing one's ideas, feelings, and hopes to build and deepen relationships; and working in teams with others to develop and achieve mutual goals. Members work on social, communicative, cognitive, and technical skills by participating in activities that stress collaboration and mutual help in developing these skills.

Quantitative measures show that Clubhouse members who visit more frequently, stay longer, and have attended for the most number of years are the most engaged in use of technology. On technology use measures (skills related to technology for school, technology competence, as well as technology depth and breadth), 56% of boys and girls who go to the Clubhouse daily score average or above average compared with only 44% of participants who visited only monthly. Greater participation also correlates significantly with such outcomes as competence in problem solving; 63% of members who stay longer (3 or more hours) score at or above average compared with only 47% of participants whose visits are shorter (1 hour or less). On measures of collaboration, 51% of members who stay longer score above average compared with only 38% of participants whose visits are shorter.

The second broad area of outcomes actively promoted by the Clubhouse centers on life pathways and members' capacities to follow these pathways to success. Youth members are provided opportunities to explore new possibilities through visiting college campuses and associating with professional mentors from a variety of fields. Clubhouse members have access to a well-developed network of connections and information. They also have the support of their

coordinators, mentors, and peers. Members often discuss possibilities and choices together. In the Clubhouse model, members progressively assume greater leadership roles within their Clubhouse, testing their own capacities, typically, to grow in ways that are new and affirming to them. Their relationships to the world outside the Clubhouse are affected by experiences in the Clubhouse, and we see significant correlations between members' sense of their own future possibilities and the amount of time they spend in the Clubhouse. Against a backdrop of low college participation rates for underserved socioeconomic groups, we find that 76% of members who visit Clubhouses daily planned to continue their education, as opposed to 66% of members who visited only monthly. Similarly, 75% of members who tended to stay for more than 3 hours per visit aspire to future education, as opposed to 66% of members who tended to visit for less than an hour.

The third broad set of outcomes the Clubhouse promotes relates to members' commitment to their communities and to service. Community building—through continuous promotion of collaborative activity, mutual support, the free exchange of ideas, and cultivation of a strong sense of belonging—starts within the Clubhouse walls. Staff and mentors inside the Clubhouse seek to help members reach out and work in the surrounding community, the broader Clubhouse Network, and society at large. Many Clubhouses build their programs directly around the pressing social and cultural circumstances that immediately impact members' lives. The continuity that is created through addressing local conditions affects how Clubhouse members describe what they have learned and hope to give in return.

Our investigation of the factors that promote positive outcomes for Clubhouse members provides an in-depth case study, we believe, of the key elements required for positive youth development. The Clubhouse model is just that: a model for how youth programming ideally integrates social, emotional, intellectual, ethical, and creative strands of activity, maximizing engagement, agency, and authenticity for participating youth. The Clubhouse creates an environment where young people, often those who have encountered challenges and setbacks elsewhere in their lives, can try their hand at being their best selves. The efforts are low- risk; members will not be judged, graded, or harshly criticized for their efforts. There is always time and room for them to retry, revise, and, for some, redeem themselves. The Clubhouse is a place that is both intellectually and emotionally safe, a highly challenging learning environment that takes into account the home, school, and social worlds members are part of and builds bridges to their futures.

Introduction

This report is intended to provide a description of how programming in the Computer Clubhouse positively influences the lives of youth participants. It draws largely from stories and reflections by Clubhouse staff and members themselves, giving voice to their diverse but similar Clubhouse experiences. In conducting our analysis, we used multiple sources of data, incorporated a 3-year quantitative assessment of outcomes, and related what we have found to the relevant research, shaping the data into something of a causal account that highlights the key features of the Clubhouse learning environment. Ultimately, we believe that efforts to systematically evaluate and measure program impacts should include the type of analysis we provide here: a rich description how the program actually works to affect peoples' lives.

For the purposes of this report, we are not sampling across the highly successful, average, and difficult moments in Clubhouse operations or reporting on the average likelihood that youth will have more or less valuable experiences depending on Clubhouse circumstances. We recognize that Clubhouses have their challenges: staff turnover, funding issues, bad days. Rather, our focus is on the features, processes, and structures that can and do work. Our approach therefore is to illustrate how the Clubhouse promotes its many positive and even extraordinary outcomes. These illustrations can have a value beyond our efforts to understand Clubhouse programming. Research-based insights into learning and human development on the one hand and rapid cultural and technological change on the other are indicating the need for us to rethink our educational institutions and our approaches to designing optimal opportunities for powerful, enduring, and applicable learning. Thus, we believe understanding alternative models for reaching and teaching youth should be a social priority. This report represents a contribution to this endeavor.

The Clubhouse Model

The Computer Clubhouse was established in 1993 by the Museum of Science in Boston to provide a creative, supportive, and safe out-of-school learning environment for underserved youth, ages 10–18. Designed in collaboration with the MIT Media Laboratory, the Clubhouse model centers on giving members access to rich social and technological resources to support the development of new skills, capacities, and personal confidence. In the Clubhouse, members have access to high-end technology for video, graphic, and web design; to resources for music production; and to ongoing mentorship from staff, volunteers, and peers. The Clubhouse also provides programming for college and career preparation.

Using the first Clubhouse as a model, the Intel Corporation has invested \$30 million since 2000 to replicate the model worldwide. The Intel Computer Clubhouse Network, based at the Museum of Science, Boston, now provides startup and ongoing support for over 100 Clubhouses in 21 countries, reaching tens of thousands of youth from underserved communities around the world every year.

The Clubhouse model is built on four guiding principles that are designed to promote positive youth outcomes. These principles are intended to “define the Computer Clubhouse Learning Model.”

- Focusing on activities that encourage young people to work as designers, inventors, and creators
- Encouraging youth to work on projects related to their own interests
- Aiming to create a sense of community, where young people work together with one another with support and inspiration from adult mentors
- Dedication to offering resources and opportunities to those who would not otherwise have access to them, in an environment of trust and respect

The Clubhouse learning environment is designed to promote the following outcomes:

- The ability to express oneself with technology
- The ability to collaborate, communicate, and work in teams
- The ability to solve complex problems
- The ability to develop, plan, and execute complex projects
- Self-esteem and self-confidence

In addition to the local resources, activities, and events individual Clubhouses provide, the Intel Computer Clubhouse Network offers many other worldwide resources and opportunities. For example, Clubhouse members can participate in the online community known as the Clubhouse Village, and every 2 years youth leaders from Clubhouses around the world meet in Boston for an international “Teen Summit” where they can go on college tours, take hands-on workshops, and participate on collaborative media projects to address a challenge in their local communities.

Methods

This research study builds on evaluation work also conducted by the Center for Technology in Learning at SRI International in Menlo Park, California. Since 2004, this principally quantitative work has addressed the impact of Clubhouse participation on members, concentrating on their socioemotional attitudes, academic attitudes, and technology use.

As an extension of that ongoing work, the current study aimed to analyze a broader range of outcomes and examine the Clubhouse settings in which these outcomes develop. SRI researchers designed and carried out a qualitative study drawing on documentation gathered over several years by the Clubhouse Network. Additionally, researchers conducted site visits at Clubhouses and interviewed staff from around the world. The resulting analysis, combining quantitative and qualitative findings, provides descriptions of how the types of activities, relationships, and experiences members have in the Clubhouse can promote the impacts we identify. Throughout this report, SRI has incorporated citations to relevant research to better contextualize and interpret our findings.

To develop our analysis, SRI used the following data sources:

1. Youth Impact Survey (conducted by SRI)
2. Network documentation
3. Semistructured interviews with network staff, Clubhouse coordinators, and members
4. Clubhouse coordinator training observation
5. Clubhouse site visits inside and outside the United States

Youth Impact Survey

As part of ongoing evaluation work with the Intel Computer Clubhouse Network, SRI designed a Youth Impact Survey, administered six times between February 2005 and May 2007 via the World Wide Web and in paper format to all Clubhouses. This survey solicited information about members' background and Clubhouse visiting patterns. The survey also included scales that measured attitudes and behaviors that SRI and the network identified as desirable outcomes of members' Clubhouse participation.¹

A total of 3,732 different members participated in at least one survey, with 750 of these members (20%) participating in at least two surveys. Furthermore, 92 Clubhouses participated in at least one survey.

To develop the survey, SRI researchers collaborated with network staff, starting in early 2004, to determine the types of outcomes that would best align with learning opportunities available to Clubhouse members. SRI reviewed hundreds of pages of documentation from individual Clubhouses on the types of impacts they were seeing. Additionally, SRI visited Clubhouses

¹ For a list of the survey questions, see the series of reports titled *Youth Impact Survey Results* available at <http://www.computerclubhouse.org/reports.htm>.

throughout the state of California in the development phase of the survey, piloting it with approximately 200 members. SRI researchers also visited Clubhouses in subsequent phases of survey development and administration to discuss coordinators' views on the impacts of the Clubhouse.

Network Documentation

In late 2007 and early 2008, Intel Computer Clubhouse Network staff provided SRI with an updated set of documents to review for conducting a qualitative analysis of Clubhouse outcomes. These documents constitute a cornerstone of this report. The documents included Assessment and Planning Reports (APRs) submitted to the network by Clubhouse coordinators and applications submitted by members for scholarships through the Clubhouse to College (C2C) program since 2004. The APRs, prepared semiannually, contained information on the activities taking place in the Clubhouse, difficulties or challenges the site was facing, and narrative descriptions of the work of specific members. C2C applications contained first-person accounts from members about their experiences in the Clubhouse, as well as recommendations in support of applicants from mentors, coordinators, and other adults familiar with their activities and development during their time at the Clubhouse.

Interviews

SRI researchers have conducted on-site interviews in multiple phases since they began work on the Youth Impact Survey in 2004. Most recently, SRI researchers attended the Intel Computer Clubhouse Network 2008 Annual Meeting in Miami. During the conference, researchers observed and participated in small and large group sessions and conducted semistructured interviews with network staff and Clubhouse coordinators from around the world. In addition to collecting information on Clubhouse activities and outcomes, the interviewers sought to elicit stories about individual members' experiences and successes from the perspectives of coordinators and other staff members.

Training Observation

In March 2008, an SRI researcher participated in and observed the training of Clubhouse coordinators given by network staff at the flagship Clubhouse in Boston. Over the multiple-day event, SRI collected observation notes on the Clubhouse Network's training processes and the Clubhouse model, philosophy, and history. SRI also collected information on operation of the Clubhouse network and on Clubhouses at their respective sites through interviews with attending coordinators and Clubhouse hosting agency representatives from around the world.

Clubhouse Site Visits

Over the past 5 years, 4 SRI researchers have conducted site visits to 14 Clubhouses in the U.S. and abroad. During these visits, researchers observed activities and conducted open-ended interviews with coordinators, mentors, and members.

Review of Relevant Research Studies

Many elements of the Clubhouse Network's approach to youth development have strong connections to important themes and principles in the human development and learning science research literature. As findings and themes emerged, researchers reviewed the relevant

literature to provide further support for findings as well as to place various components of the Clubhouse model within this broader scholarly framework. In addition to the research on Clubhouses and Clubhouse activities, researchers examined the literature on learning and development, learning in nonschool settings, studies on technology-supported learning activities, and the role social and cultural contexts play in guiding and supporting learning.

Analysis

Our research team organized the documentary material into categories suggested by the material using a grounded-theory approach (Charmaz, 2006). These categories—the outcomes and processes specified in the report—reflect the perspectives of Clubhouse members and staff that are evident in the material and, at the same time, represent the researchers' independent analyses of the kinds of learning experiences available in the Clubhouse. Shaping these categories into an outline of how the Clubhouse model operates, researchers incorporated narratives from staff and members to illustrate typical experiences at Clubhouses. Researchers checked their interpretations of the documentary data against data from semistructured interviews with coordinators and staff, site visits to individual Clubhouses, and observations of formal trainings and events. These findings were also compared with those from relevant research studies and were then linked to the quantitative data from 3 years of surveys at Clubhouses.

Notes on Quotations and Sources

Many of the quotations in this report are from individuals for whom English is not a first language. To increase readability, we have corrected typographical, simple grammatical, and spelling errors (for example, changing “fro” to “for” and removing words inadvertently repeated), but otherwise the language remains as originally written, preserving the voice of the many Clubhouse staff and members who gave us their personal expressions.

Also, introductory comments are often followed by a series of quotations in short paragraph form. It should be noted that all quotations in this report separated by a paragraph break come from different sources and should not be read as one long quote.

Throughout the report, proper names and other information that might have otherwise allowed for identification of particular individuals or Clubhouses have been changed to ensure confidentiality. In a few cases, quotes that could provide enough information to identify the Clubhouse, but not any individuals involved, are used with the explicit permission of the Clubhouse coordinators.

21st Century Skills

Technology use—particularly fluency in using technology to create content, address problems, and serve other purposeful ends—is considered one of the core skills needed to live and work effectively in the 21st century.² Yet the ability to use technology fluently depends on the development of many related capabilities. These capabilities in turn serve much broader ends than supporting technological fluency. Ultimately, digital technologies are tools, the effective use of which depends on thoughtful analysis of the situations in which they can be applied *in addition to* the capacity to skillfully use them. In the Clubhouse environment, members put a wide array of useful capabilities to work as part of their daily activities. These capabilities become part of a repertoire of behaviors (Gutierrez & Rogoff, 2003) that members can apply in other settings in their lives. In this way, the experiences of the Clubhouse lend themselves to use in other practical situations, becoming the foundation for skillful, adaptive, and appropriate behaviors elsewhere.

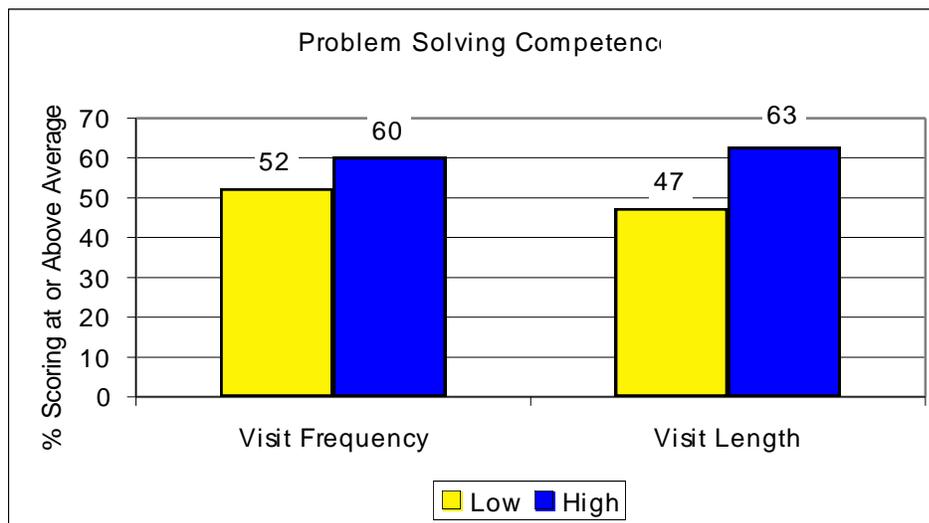
In this section we highlight the ways in which the Clubhouse environment provides members opportunities to develop problem-solving skills, creativity, communicative competence, and the capacity and disposition to work well with others. Technological fluency will be elaborated in the following section. Many other 21st century skills tie in to the ones we discuss and stand out as those promoted by the Clubhouse environment, social awareness, responsibility, and adaptability among them. However, because these are addressed as themes, they are not specifically called out here.

Authentic Problem Solving

One of the key skills for the 21st century is being able to recognize, define, analyze, and solve problems. Problems come many shapes and sizes: small-scale challenges in designing a product or coming up with a plan and large-scale challenges associated with life decisions, situations that significantly affect others, and the resolution of serious interpersonal or intergroup conflicts. As an intentionally designed learning environment, the Clubhouse scaffolds members' abilities to recognize, analyze, and effectively address problems both small and large. The Youth Impact Survey results from nearly 4,000 members show that the members who visited the Clubhouse more frequently and stayed longer scored higher on measures of problem solving competence (Figure 1). This research found that 60% of members who visited every day scored average or above compared with 52% of members who went monthly. Likewise, 63% of members who stayed for longer than 3 hours scored average or above, compared with 47% who stayed less than an hour.

² See, for example, <http://www.21stcenturyskills.org> for materials prepared by the Partnership for 21st Century Skills.

Figure 1. Problem Solving Competence, by Visit Length and Visit Frequency



In a sense, the most important “problem” members address is how they use their Clubhouse time. The following recollection of one member clarifies how much everyone at the Clubhouse must make their own decisions about their participation—analyzing situations and making good choices with the help, scaffolding, encouragement, and inspiration of others. He recalled his first exposure to the Clubhouse 3 years earlier:

I didn't immediately understand the fascination for being in a boring hall full of computers. And when I was about to stop going there because I couldn't find anything to interest me, my sister and Mario (the coordinator) showed me an animation. I said "so what?" and my sister said "I made it!" That caught my interest, and before I know it, I was creating things as well, making magic with computers.

First-time attendees face a wide range of possibilities, but they are not told—quite unlike in school—what they should do or how they should do it. They are not obliged to do anything at all and, because Clubhouse participation is strictly voluntary, can choose to walk away. Therefore, the first steps members take in the Clubhouse—and the places where they might lead, discussed in the Pathways section of this report—address the larger issues of how youth determine their own agendas and decide how to purposefully use their time and talents.

Deriving solutions to this fundamental problem of individual initiative, self-determination, and personal agency undergirds all activities at the Clubhouse. The Clubhouse does not prepackage or spoon-feed tasks for its members. Rather, members engage in problems and themes that they choose themselves based on their own experience. As one coordinator stated, the Clubhouse is “interest driven as opposed to curriculum driven.” The problems that members address in their Clubhouse experience are typically authentic, relating directly to issues that are important in their lives. Activities relevant to personal interests, particularly for youth, have been shown to promote engagement and enduring motivation for learning (Barron, 2006; Gee, 2004; Lee, 2007; Moll & Gonzales, 2004; Hidi & Renninger, 2006).

In finding ways to address their own interests and concerns, members learn to see the contours of a problem, to envision the possibilities for addressing it, to break it into workable steps, and to apply the right tools and resources effectively to solve it (Hmelo-Silver, 2004). Members find in the Clubhouse a readiness to accommodate their interests, even when they fall outside the normal parameters of Clubhouse activities. One coordinator described how a Clubhouse member initiated a new type of activity:

She came to me one day and said, can I teach a Spanish class? I thought, I don't even understand what she is saying, but I thought about it and said, well yeah, you can teach a Spanish class. She went on and made all the materials to teach Spanish—she made a Spanish class with them. Made up all the materials for it, gave them out to them. And she had a successful time, for a week or two teaching this Spanish class.

Members often solve the broader problem of finding ways to pursue their own interests by developing activities that involve multiple types of analysis, creativity, and other elements of problem solving: According to a coordinator,

Based on youth interest, youth have gotten together to form investigative teams. The result of these teams is around twenty-five youth who are learning to do crime scene investigation science. The teen mentors have filmed out surveillance footage of fake crimes and helped to create fake crime scenes. The members then work in investigative teams to solve and learn techniques to solve cases. They have learned to observe, fingerprint, search and many other topics. A team of youth put together the fake crime scenes for other youth to discover. Teambuilding and observation activities help youth to realize that technology can be used to solve crimes. The other youth were given a crime, evidence and set areas in which to discover and create a portfolio on what activity occurred at the scene of the crime. So far, the crime scene investigators are preparing for more difficult cases.

When creating products with technology, everyday design decisions are forms of problem solving—determining how to express ideas, sentiments, and artistic vision through the tools and resources available. Choosing tools, accessing workspace, sharing tasks, planning for next steps, and keeping a vision of the end product along the way to completion are integral parts of using technology to create at the Clubhouse.³ Broadly, decision making, planning, and design seen in examples like the one below can be interpreted as the identification and solving of multiple small, medium, and large challenges that promote the development of problem solving ability. As a coordinator wrote,

We've...seen one member design a website over the course of a couple of months and enter it into a local Business Professionals of America contest, where he placed second. He's currently continuing his work on the site and preparing for the BPA State competition.

³ We see evidence of a relationship between Clubhouse activities and problem solving capabilities in our quantitative assessments. Youth Impact Survey results showed that 50% of members who used technology for writing activities (creating a newsletter, story, or article) scored average or above on a measure of problem-solving planning, compared with just 40% of members who did not engage in this sort of activity.

Other coordinators described the challenges members undertake:

One of our youngest members, Noble Colvin, has learned to integrate Bryce and Photoshop. Another member, Wayne Snyder, brings his own musical instruments into the Clubhouse and creates his own tracks using the keyboard, electric guitar, acoustic electric guitar and [Sony's] ACID.

Currently members have come together as a group and are active in preparing materials for the SE Regional CD Music Collaboration. They have delegated which member(s) will be responsible for the laying of loops, musical creation using the keyboard, lyrics, vocals, graphic design, and engineering.

Most projects that members get into involve various softwares and tools. They have had great exposure to various complex problems because of this, but can handle it because of our "Problem Solving Model" that all members are aware of.

Often, members apply problem solving skills in the context of addressing substantive social issues—displaying development of a constructive social awareness along with problem solving. Teen members working on a digital imaging project in one Clubhouse applied their skills to various issues such as underage drinking, use of drugs, suicide, and bullying. The representations they created, which included statistical charts and graphs in addition to photographic images, were then exhibited at their local park during a community center activity, extending the value of their work to members of the community at large. Other members have similarly used the skills they have learned in the Clubhouse to solve community problems, such as starting technology training programs for seniors or creating social awareness campaigns about violence or racism.

Many of the problems that Clubhouse members face and must solve are dramatic. One former member, now a college graduate with a successful technical career, lost her entire family in high school and, through the help of Clubhouse staff, was able to stay in school, complete her education, and not give up during the series of crises she endured along the way. Perseverance, adaptability, and belief in possibilities were particular strategies she used, believing that, "I could go down the same path and be a woman using technology. That I don't need to go down the typical path that women go down; this made me open my mind."

Typically, the social conditions of the areas where the Clubhouses are situated directly influence the types of problems members face. The Clubhouse community often helps ameliorate these problems because its norms and special codes of behavior make the Clubhouse a safe space for youth to explore and move beyond some of the difficulties of their everyday lives. A coordinator explained:

Young people in the catchment area of the Clubhouse live in an area of deprivation which has been amongst the worst affected by the "Troubles" and have varying expectations regarding behaviour, language and attitude towards others. Both the Coordinator and Assistant Coordinator work hard to ensure that members adhere to the code of conduct and respect themselves, each other and the equipment. In addition we work with alternative education providers whose students are excluded from mainstream education, often for behavioural reasons.

We have found many other examples of how youth capitalize on the support they receive Clubhouse to initiate solutions to sometimes dire conditions in their personal lives. Lawrence and his mother were homeless after leaving an abusive household. Despite the difficult circumstances of his life, Lawrence used the resources and support readily available at the Clubhouse to cultivate his own skills and engage in activities meaningful to him. Lawrence said:

In my neighborhood, people participate in illegal activities in order to make easy money. Instead of participating in this behavior... I learned to express myself through music. My music has always been about positive and uplifting messages. I talk about real life things that affect my peers, and through my music, I try to find more peaceful solutions for them to succeed....I want to encourage them through my music or just by giving a helping hand. Just as Malcolm X and Martin Luther King Jr. uplifted people in a positive way, I hope to do the same.

The types of problem solving we see in the Clubhouse do not rely on isolated analytic skills or simple, artificial tasks. The problems members face and solve engage an array of social, technical, and intellectual capabilities, which members develop in the process. Our quantitative research shows correlations between many of the kinds of capabilities required in problem solving as it is practiced at the Clubhouse and participation in Clubhouse activities. For example, our survey findings show that members visiting the Clubhouse more frequently and staying for longer scored higher on measures of social competence (Figure 2). Among members who visited every day, 60% scored average or above compared with 49% of members who went monthly. Likewise, 61% of members who stayed for longer than 3 hours scored average or above compared with only 49% of members who attended for less than an hour.

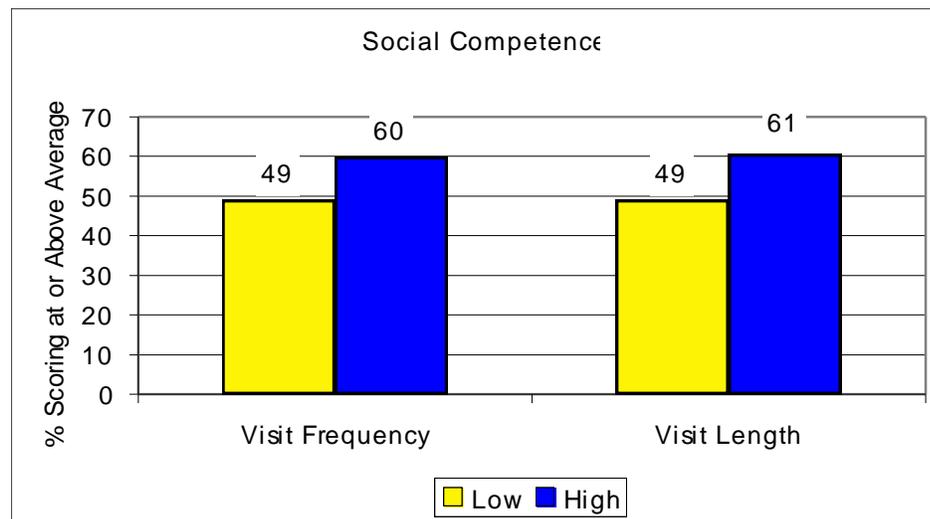


Figure 2. Social Competence, by Visit Frequency and Visit Length

Across our data, we see that engagement in the world of the Clubhouse entails confronting numerous challenges, large and small, that affect members' transition to competent adulthood.

As members become more capable, they become more able to anticipate and deftly analyze complex situations, make consequential choices, and graduate to more sophisticated forms of problem solving in their lives. Along the way, members naturally experience some moments of failure. The social support and scaffolding available in the Clubhouse give many members the confidence to attempt challenges even when there is a reasonable chance of failure. Members learn to be open to the possibility of not getting things right the first time and of learning from their mistakes.

It played a big part in improving my skills and most of all, trust in myself and belief that I can have a good future. At first, the lack of self-confidence was my problem. Many said that I can do anything that I put my mind to, but I'm already the first person to doubt it. I have lack of trust in myself. I am afraid to do wrong. I am also afraid that somebody may get angry with me if something fails. Nevertheless, the Clubhouse changed me. Here, I can do what I want in my own way. No one can say that I did it wrong, and I learned that my way can actually be "the" way. Here, I also learned that my failures are the keys to my success. I learned to accept failure, and to know how to learn from these mistakes. And what I learn makes new problems easier to solve.

Lila, a former member, said that when she came to the Clubhouse she was afraid that she might break the computer, but that staff told her to just go ahead and bang on it a little, that the concern should not get in the way of her creative process. Members are even encouraged to modify the HTML code of the Clubhouse Network community site, for example, when they personalize their online profiles, even though this practice presents the risk of introducing bugs and problems into the website code. There is a more important objective in this situation than maintaining the website. By taking high-profile chances, members learn that "when you try new things, you might break things, and this is part of cultivating a confidence in taking risks."

Both the setbacks and the successes members experience in the Clubhouse environment help them build the capacity to identify problems and to mobilize the tools and resources needed for addressing them, affecting potentially every aspect of their lives.

Serving Immigrant Youth (Clubhouse Visit)

Located in the western U.S. outside a small coastal town flanked by mountains and cultivated fields, this Clubhouse is part of a community facility within a housing complex inhabited mostly by immigrant farm workers. The Clubhouse primarily serves Latino youth, ages 10–18, who live in the complex. There is a steady stream of members going in and out, and local children under the age of 10 frequently try to enter or peek through the window. The space is clean and well organized, reflecting a shared commitment to maintaining it well. According to the coordinator's assistant, the Clubhouse gives members the opportunity to steer clear of some of the problems that are endemic to the community, including gang activity.

Access to technology is a big draw. The majority of members do not have a computer at home, and those who do have old and slow computers that are not online. But the members' interest in the Clubhouse goes beyond software applications or Internet access. Because many members had wanted to know how computers work, staff helped them start a project to learn about hardware by taking some old computers apart. During SRI's visit, one of the members was trying to install a new hard drive on a computer that had been partly disassembled. He spoke enthusiastically about his project and asked many computer-related questions. Other members shared their enthusiasm about having recently created a level in the game *Mario Fantasy* that would soon be filmed.

Female members often do their homework at this Clubhouse, using technology to complete their assignments. On our recent visit, two girls were doing history homework—searching for examples of German science and technology from 1900 to 1925. They found pictures of planes and tanks, and the coordinator helped them find pictures of German scientists. Another girl was writing a reflective essay for English class about a quote she had chosen. Yet another girl was pursuing a personal interest, searching for songs and favorite musicians. She worked very methodically, starting with one artist and one album and then working through the tracks on that album before moving to the next.

Creative Production

While creativity always ranks high on the list of critical 21st century learning goals, educational programs worldwide struggle with how to promote it. The story is quite different at the Clubhouse, where creativity infuses most everything. The basic premise that learners construct their understanding and knowledge of the world—a critical insight in learning theory that has reorganized much of the educational field—supports the emphasis on creativity in the Clubhouse (Bransford, Brown & Cocking, 2000; Kafai, 2006). As one coordinator said, “We give access to creativity.” The Clubhouse offers a type of learning environment that is different from the more formal setting of school or even many other afterschool programs. Rather than a top-down structure requiring youth to conform to schedules and assignments—which can undermine creativity—the Clubhouse emphasizes social and technological support of members' own

emergent interests. The support provided by coordinators, mentors, and other members positively influence members' motivation and confidence. Feeling safe while taking risks and trying new approaches, members are better able to engage their own creative potential and learn through it. One member wrote:

Doing projects at Clubhouse is funny. It also enriches me. It has a part of recreation, where you are not just working; you are sharing experiences with other members. We learn from the others, by generating bonds of works in our surroundings. I found at Clubhouse how to express myself in a free manner. Using different forms of media communication, we don't have strict rules like in school, where you have a schedule to enter to get out from the computer room. In that kind of places we just use technology in place. It becomes a boundary. I would like that many Clubhouse were opened in Mexico and around the world.

Creativity is core to the development of members' sense of self worth, of purpose, and of connection to others and belonging in the community. Members convey a sense of the joy they have in the creativity the Clubhouse allows them.

I can now create beautiful, creative, and artistic things with the aid of computers. Before, when the Clubhouse had not come my way yet, I just make my projects with my bare hands. Clubhouse is really a benefactor especially to those students who is less fortunate that can't afford to rent computer or have their own.

Coordinators and staff often identify creativity as a key aspect of their work with Clubhouse members and note that creative production and sharing are built into numerous activities as well as into the spatial organization of the Clubhouse.

At the Clubhouse, we as in the coordinator, aids, mentors etc, encourage each child that this is their own personal place to come and just be yourself. So if they can't express themselves at home, school or any other place, they can come and be themselves in the Computer Clubhouse. So they come and start on their own piece of art; and then place it on the "Clubhouse Wall-Of-Fame" that is what we call it at[our Clubhouse; because every person's art shows their inner being, it motivates them every time they come in to create more work, and it tells them that they can master anything.

Members are passionate about their creative work as it is based on their own interest. Prints of creative works are showcased around the Clubhouse. Animations, films, and music work are shown to new members as a sample of creative works made by members of the Clubhouse. Members are always asked at the start of their Clubhouse sessions what they would like to work on that day. Through this, members know to take initiative in deciding about what they would like to work on. Some members decide to take on complex projects and come up with some powerful-looking images which takes more than 2 weeks to complete. These members take the time to evaluate, develop and improve their work.

A culture of expression and creativity is shared among Clubhouse participants and is easily adopted by new members. Often, Clubhouses provide opportunities for members to expand their creativity in new forms by bringing guest artists in to help youth produce artifacts such as quilts, story boxes, storyboards, poetry, and music that is related to significant events in their lives.

Members frequently turn to one another to showcase their developing skills, engage in collaborative jam sessions, or get feedback on their work or ideas.

Members are continuously motivated to explore their own imagination. At least once a week teen members hold a jam session in the sound room at this time they show off so to speak their skills at rapping, musical creation and engineering. These sessions have sparked some creative interest in other members as well. Especially the female members whom have decided that they too can compete or show off during the jam session.

Sylvio has been diligently working on writing scripts after seeing Ghost/Myth Chaser episodes. He normally focuses on writing poetry so writing dialog and actions has been a unique challenge for him. Often he can be seen discussing ideas with Rowan or some of the other teens and them coming in with notes on what he wants to write up. His only challenge seems to be having too many ideas and not enough time to create and write them all down. As soon as he finishes one he would like to film it out with the teens as actors.

The types of creative expression that are legitimized and encouraged in the Clubhouse allow members to stay connected to their roots, their cultural identity, their bodily awareness, and their own particular interests. Members are often given the opportunity to explore the deeply personal aspects of their lives and thereby reflect on them, developing narratives of their lives that help them both make sense of and become proud of who they are (Bers, 2006).

Mirella, Marcela, and Isabel, who recently followed the workshop of fashions design, finalized their project designing a magazine that shows the process and the results of this workshop. In the magazine the girls made their own clothes according to the proportion of their body using the computer and the digital table developed 100% by the participants. This type of activities shows us the necessity to reinforce and to implement activities to attract the girls to the technology.

Digital Storytelling Workshop recently sparked interest in members to relate an important story in their life through photos and narration; the subject was deeply personal and the members used creative, innovative ways of telling their story.

The older group utilized morphing software to morph themselves into their heros/sheros. As their images morphed their vocals speaking in the third person were played.

Some activities provide members the opportunity to renew or renegotiate their relationship to their community and their society. Because their own subcultural or iconoclastic interests are given legitimate play within the institutional norms of the Clubhouse, members can engage in activities that allow them to reexamine and address their views of themselves and their attitudes toward adults.

We've got a number of our "higher risk" members that have created a series of religious tattoo collages in Photoshop. They try to impress each other with their work — so much so that it's become a bit of a competition between them. These kids have been problematic for the high school's administration and had been suspended from school for various reasons — including the sale and distribution of narcotics — but seem to be flying right now. They show up at the Clubhouse daily at 4 p.m. like clockwork. Once a couple of them found out that they could access the tattoos without getting in trouble, their interest and membership tripled.

For many members, the artistic activities that constitute much of Clubhouse life allow them to realize interests that they might not have known they had and, in many cases, would not otherwise have had the opportunity to develop.

Sima...started by drawing on papers, scan her pictures, edit them via photo shop and now she is very good in comics and designing magazines.

Aisha is a 15-year-old girl [and a] very talented artist, she had the chance to learn how to use her eldest brother's computer but wasn't allowed to learn anything on software, the Clubhouse gave her a chance to learn how to implement her talent using illustrator she is doing now a wonderful graphics of Japanese cartoon characters that professional designers do, Her dream is to become an art teacher or cartoon designer, she express her happiness in saying "my parents didn't except me at the beginning to join the Clubhouse but after they saw my work they new that it's a chance for me they even send my talented 13 years old sister.

The girl members now are joining a modern dance class that is conducted by a mentor volunteer from Canada, it really makes them more interested in the Clubhouse.

As mentioned above, members often take their creative work outside the Clubhouse for display and even competition. Creativity then becomes a point of connection for these members to the broader world, tapping into their interests, skills, and talents as well as extending them through the challenges presented by the competitions or other opportunities for public display.

Currently we have two groups of members working in teams to compete in a competition hosted as a joint venture between Verizon and Microsoft. The competition climax will take place during Black History month. The group has to choose a person or place in African-American history to research and then they must choose how the info will be presented. The teams will be judged on use of technology, creativity, and presentation.

This report period a total of 10 members ranging from age 9-15 competed in a technology contest...Both groups had to present their finished products to a panel of judges. The younger members produced a news broadcast. They prepared a script, filmed their skit in front of a green screen and then utilized Poser5, Adobe Premiere for editing and adding their backgrounds in green screen areas of the video, and ACID 4.0 for background music.

There are several members who have been placed in jobs through city funded programs. One such program worked with teens to develop their art skills resulting in the painting of a beautiful mural under the train station just a few blocks away.

Communicating in New Ways

The Clubhouse provides a wealth of opportunities for members to establish constructive dialogue, represent information and ideas effectively, and express themselves with clarity and nuance. Solid communication skills are essential to functioning in the 21st century workplace, where original contributions from employees are generally encouraged because of their potential value to an organization (Gee, 2000). Many members describe the importance of their Clubhouse experience in terms of being able to learn how to communicate with new people, in new places, in new ways.

A member related the importance of learning to “interact” with others that the Clubhouse provided:

When I went through orientation at the Clubhouse, I learned a lot. I learned not only how to operate a computer, which is the main priority of Clubhouse, but I also learned how to befriend others whom I didn't know, how to cooperate with them and how to understand their different moods

that I know must go along with. Being a part of the Clubhouse not only increased my technical knowledge, but also helped me to develop as a person overall, in learning to interact with other people.

Effective communication and productive interaction are essential in teamwork:

We have also seen an increase in teamwork. Our Gingerbread House contest is a good example of this. A number of members chose to work together to come up with the design of their house. Those who did not work in groups freely shared their opinions with one another and gave advice on what to add to their work. An example of this is our haunted house project. Members critiqued other's work before they were submitted. All of this was done on their own with no influence from myself.

Mentors and members of all ages regularly participate in weekly workshops and projects that are designed not only to foster creativity and knowledge, but to create opportunities for teamwork and social relationships. The goals of workshops are for participants to take away knowledge and relationships so that when youth complete a workshop they are able to communicate and share their experiences with other members in the Clubhouse. Over the past quarters, this Clubhouse has participated in the Teen Summit, regional and annual conferences.

During our summer months we have had an increase in group work. Members have collaborated on movies, illustrations, and stories. They have helped one another share ideas and express themselves in new ways.

One former member and current mentor described the impact on her professional life from learning how to better communicate at the Clubhouse. She explained:

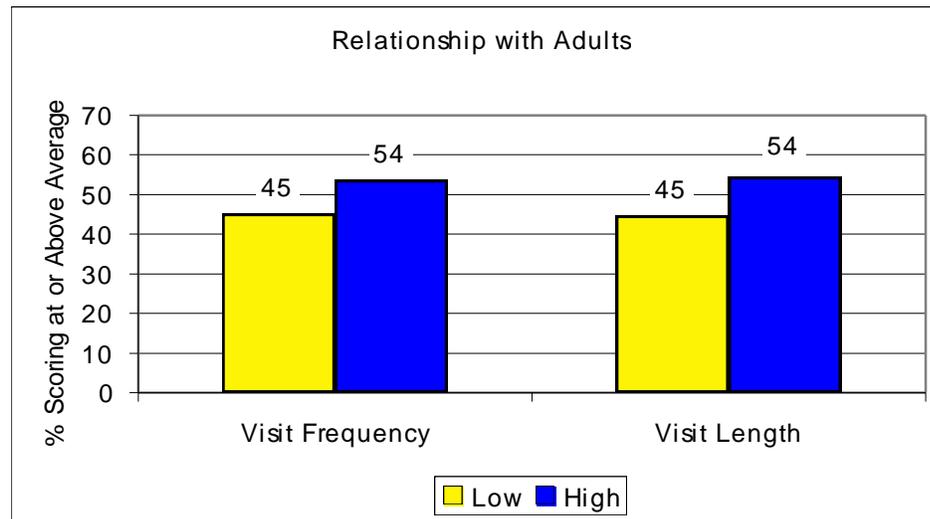
It's really Girl's Day that affected me... Participating and eventually leading and doing workshops for Girl's Day taught me how to present — I love public speaking now.

Another member related a similar experience:

My coach, the Clubhouse Coordinators and the mentor instructed me on making a proposal about a specific project like businessmen and professionals do. They also help me develop my speech and communication skills for its presentation.

An important dimension of effective communication for youth is being able to engage with adults (Figure 3). Survey findings indicate that members who visited the Clubhouse more frequently and stayed for longer scored significantly higher on measures of relationships with adults: 54% of members who visited every day scored average or above compared with 45% of members who visited monthly. This finding was consistent for members who stayed for longer than 3 hours as compared with peers who stayed less than an hour.

Figure 3. Relationships with Adults, by Visit Frequency and Visit Length.



Learning to communicate is also to a great degree about creating appropriate representations of one's ideas and message to reach an intended audience (Cope & Kalantzis, 2000). In many Clubhouses, members use media technology to create flyers for events, for example, or to create awareness about an issue they care about. In one Clubhouse in the United States, members create a television broadcast that is shown every week on the local cable network. Members produce the scripts, create the sets, and organize discussions on a range of issues that concern teens in their area. At another Clubhouse, members produce videos for screening at film festivals and online that focus on environmental practices and current political events.

Working with Others

The Clubhouse is, perhaps above all else, a social place, but not in the sense that members do not get down to hard work or that they simply hang out. As one coordinator put it, "We provide a social fabric that bonds them." As discussed in the Technological Fluency section, at the Clubhouse members achieve at levels often much higher than they could have imagined, children and youth taking on advanced technical challenges as part of their efforts to create products that they value and in which they take pride. Nearly all Clubhouse participants, when surveyed, reported that they participate in digital design, animation, music production, and similar creative activities on a regular basis at the Clubhouse.⁴ But rather than being an impediment to such achievement, sociality in the Clubhouse facilitates it (Collins, 2006; Sawyer, 2006). In other

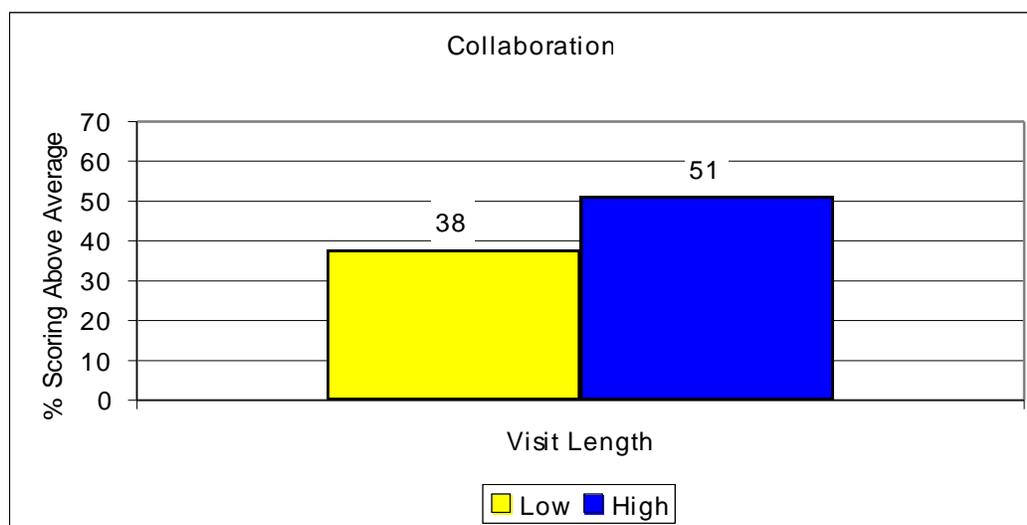
⁴ Over the 3-year period in which we surveyed Clubhouse members, 92% of respondents stated that they usually engage in one of the following activities: making a design or picture; making a video or animation; making something in the music studio; designing a website; creating a game, toy, or robot; writing a newsletter, article, or story; programming in Microworlds, Visual Basic, or Java.

words, the primacy of social relations at the Clubhouse has much more to do with getting work done than not getting work done.⁵ One coordinator explained:

Before a kid will come because he wants to gain something out of the Clubhouse, he will first come for an experience. If his experience will be good he will come back. We will try to convince him to learn something more. But first he has to have a good experience in order for him to come back. They are feeling welcome enough to come back.

The social aspects of achievement stem from the degree to which members are encouraged to engage in activities together. Built into the Clubhouse's mission and precepts is an emphasis on knowledge sharing, collaboration among peers, and mentorship at multiple levels. Our impact survey shows that members who visit most and stay the longest at the Clubhouse, thereby engaging most deeply in the relationships and activities Clubhouse, showed the strongest association with positive attitudes toward collaboration and other socioemotional measures such as relationships with adults, sense of belonging, and social competence. On measures of collaboration, 51% of members who stayed longer (more than 3 hours) scored above average compared with only 38% of members whose stay was shorter (1 hour or less) (Figure 4).

Figure 4. Collaboration, by Visit Length



Not surprisingly, on measures of sense of belonging and social competence (Figure 5), of the members who stayed longer, 68% and 61%, respectively, scored average or above compared with 50% and 49%, respectively, of members whose stay was 1 hour or less.⁶

⁵ Social interaction as a nexus for learning and productivity is a key theme in many discussions of new visions for education and development (see, for example, Bekerman, Burbules, & Silberman-Keller, 2006; Cope and Kalantzis, 2000; and Nasir, Rosebery, Warren, & Lee, 2006).

⁶ For boys, there is also a statistically significant correlation with how often they visit the Clubhouse. Among boys who visited the Clubhouse daily, 50% scored above average on social competence compared with 33% who visited only monthly. Even more significantly correlated to frequency of visit were measures on sense of belonging, where 66% of male members who visited daily scored average or above average compared with 42% of male members who went once a month. Measures on male members' relationships with adults showed that 61% of those who went daily scored average or above compared with

46% of those visiting monthly, and 58% versus 41% scored average or above on measures of collaboration. In relationships with adults, 54% of members of both sexes who stayed longer scored average or above average compared with 45% of their peers who stayed for a shorter time.

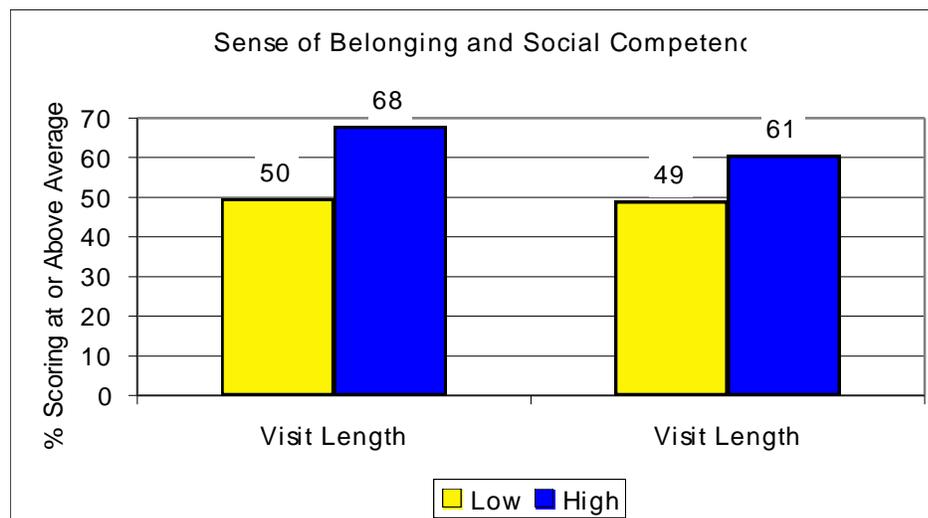


Figure 5. Sense of Belonging, by Visit Length, and Social Competence, by Visit Length

Narratives from members, mentors, and coordinators throughout the Clubhouse community describe the peer-to-peer support, sharing, teamwork, and collaboration that are at the heart of the Clubhouse experience. These descriptions testify to the extent to which achievement for one member implies achievement for others: Clubhouse norms dictate that what a person learns is for sharing with others, helping them to learn, as much as it is for using one's self. This norm is evident in members' day-to-day activities as well as in the standards to which the Clubhouse leadership is committed. In making their recommendations for the Clubhouse-to-College scholarship program, for example, coordinators reference the accomplishments of individual members with respect to their guidance of others. They wrote such comments as:

He is committed to the Clubhouse concept and is excited to teach members new things and guide them in their projects.

Every thing he got and learned from the teen summit he shared it with the members and mentors as well as soon as she came back, and he taught many members how to use Hyper-score.

Stephan has been a great help around the Clubhouse, especially in the formal classes such as the video game academy. He volunteers his time and pays close attention to the lessons and then helps others... often those who are "slow" also. This to me is amazing — considering his limitations.

When we put things to try about translating the "create a book," he was the first one to try this challenge and he encouraged others on this after that he started scanning other stories at the Clubhouse and tried to translate it.

Those members who have readily picked up skills and become proficient in various programs help out in the Clubhouse. There is not much collaboration between Clubhouses, but our members do collaborate among the various age groups here.

In any of the workshops from animation to videography, youth generate completed projects and then go on to help other youth create projects. Youth and teens spent this whole summer, three months, working on a summer video. A core team of twelve members helped to create the video with the support of fifty other youth and teens that had some hand in a part of the project. The project started out as a small team developing the video setup and creating basic storyboards of the video.

We find a great deal of evidence regarding the strategies and practices within the Clubhouse environment that promote these kinds of peer-to-peer sharing and collaboration. Members are coached on how to “build each other up, rather than knock each other down,” are provided strategies for offering constructive criticism, and are encouraged to ask for help from more able peers—who in turn “become good peer assistants and are helpful with large groups.” The emphasis on providing one another with guidance and support has led individual members to document the ways in which they and their peers have helped one another:

I have helped the younger Clubhouse members with programs they didn't understand. Like Photoshop, Flash and the rest with my anime drawings. I use my own illustrations in the Clubhouse and the young members have seen my drawings and asked me would I teach them how to draw some anime pictures.

If a member of the Clubhouse would ask me for help I would stop what I am doing and I help them with what they need. I watched a Clubhouse member on the 3d Game Maker and was interested in it. I asked him would he show me how it worked. This made him feel happy that I asked him to help me.

I also help run a small girl group on Wednesday at the Clubhouse. We try to empower more girls to get interested in media and technology.

...now I'm much more of a mixer and I and my friends we learned how to work as a team.

I have also tutored the younger children at the Clubhouse with their homework and explaining to them how to operate some of the computer programs that I have understood.

If someone new comes along one of the older members will show them how to operate the equipment. I have also had teens willing to help my youngest members. During the month of October our Club held a haunted house. Clubhouse members were responsible for coming up with music for the event. One of my oldest teens worked along side a six year old to produce sound effects.

It wasn't until I went to the Clubhouse that I realized that music carries a powerful message. I also came to realize that the message could be positive or negative and the decision was up to me... I want to bring love to those I meet and my lyrics are positive and real. Now I mentor kids in the music studio and help them on their exploration into their creativity.

In addition to members purposefully helping one another learn new tools or techniques, the Clubhouse environment promotes “learning by doing” Clubhouse (Barron, 2006). Through efforts to collaboratively create magazines, produce videos, stage public events, or take community action, members of the extended team must develop the skills to work together effectively. As one coordinator noted, many of her Clubhouse’s programs are “based on teamwork and are based on the model of members leading discussions, such as Tech Team, Bake Tech, and Youth Activists Network.” She added, “Several of these groups are encouraged to mentor other members during open drop-in time or to invite new friends to meetings.” Another Clubhouse coordinator wrote:

Recently we’ve done movie projects which require a lot of team work. It’s good to see personal barriers shatter and work getting done. Also it shows how some members set the tone and how other members learn from that tone.

Another key resource is simply the example set by other members: “When participants see one another’s work, they often ask how it was done, and begin to learn.” The learning resources are as fluid as they are varied, making for multiple points of entry and opportunities for growth in relation to the varied activities in which members engage:

[Y]outh are encouraged to work within groups in order to build a larger project. This increases learning interest through the peer-to-peer learning module; it also provides an environment where youth can be eased into more complex projects with the support of their friends and mentors.

As the above quote suggests, scaffolding or “helping to self-help” characterizes the process members use to increase their competence and capabilities.

The following table shows some of environmental features of the Clubhouse that support the development of 21st century skills.

Features of the Clubhouse Environment that Support Development of 21st Century Skills

Problem identification and solution. To develop the types of strategic thinking needed to solve real-world problems, learners need to understand the intrinsic properties of the problems themselves. Understanding the nature of “textbook” problems typically requires little analysis, and solving them typically requires the use of only low-level skills. In Clubhouses, problems arise as part of the projects that members undertake. If something they develop or design is not working, for example, members must figure out what the problem is and how to solve it.

Relevance. Content that is relevant to the context of their lives leads learners to deeper engagement and deeper thinking. Relevance is enhanced in an environment that helps people draw connections between what they are learning and how they can put the knowledge to use, especially in developing solutions to challenges facing them or their communities. The latitude given to members in choosing their activities and role within the Clubhouse allows them to make what they do relevant to their life goals, interests, and issues.

Broad and integrated themes around which learning is built. Themes provide coherence to a body of activities or projects, allowing for greater leveraging of ideas, insights, representations of information, and products. A theme fosters the application of a variety of skills and the deepening, integration, and development of new knowledge. In Clubhouses, members develop their own themes and lines of interest on which to build projects for themselves.

Active exploration. Learners are better prepared to acquire, remember and apply new information, strategies, and skills once they have spent time exploring a challenge or problem for themselves, that is, without receiving explicit directions or answers at the outset of a lesson. The most powerful form of learning is “learning by doing”—hands-on, problem-oriented, and open-ended—the type of opportunity offered in the Clubhouse.

Choice and autonomy. An environment that supports the development of 21st century skills provides learners with a measure of choice in the activities they undertake, the strategies and tools they use, and the creative aspects of their plans, projects, or designs. The Clubhouse model is premised on activities being chosen by members.

Cycles of creation. The ability to use technology effectively, to think critically, and to collaborate meaningfully with others is enhanced best in a *cycle* of generating and improving their work. In each cycle, students plan, execute, revise, reflect on, and share their insights about the product or solution they are developing. The Clubhouse model engages members in multistage extended projects, encouraging revision.

Collaboration and communication. A key requirement of the 21st century workplace is the ability to communicate effectively with colleagues to set goals, identify and analyze problems, and deliver solutions. Collaboration is built into the Clubhouse model, across activities and age levels.

Authentic feedback. In 21st century learning environments, learners work on activities or projects that have no single specific outcomes. Instead, with the help of others, learners must assess their own work relative to how well it serves the purposes for which it was intended. The Clubhouse model promotes self-assessment and reflection, peer criticism, and authentic opportunities for feedback on members’ projects.

Adults as facilitators and mentors. Rather than serving exclusively as experts who provide information, in the 21st century learning setting adults serve to facilitate students’ exploration, application of skills, development of personal interests, and creation of original work products. The mentoring relationship central to Clubhouse model minimizes didacticism and builds relationships of trust between the coordinator, mentors, and members.

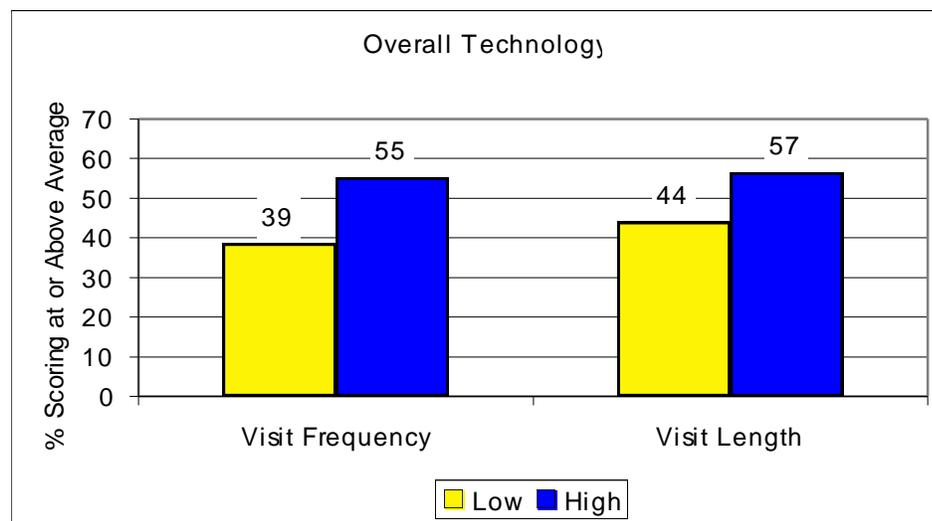
Use of 21st century tools. Participants in 21st century learning environments are given the opportunity to develop skills related to information, media, and technology. The Clubhouse environment is structured for

members to build their capacity to use a wide range of digital technologies to communicate, express themselves, and engage in complex problem-solving.

Technological Fluency

Despite a general increase in access to technological tools by people throughout the world, Computer Clubhouses provide children and youth with the type of high-end technology resources most could not find elsewhere, including at home, in school, at the library, or in other sites such as workplaces. These sophisticated resources give Clubhouse members distinct opportunities to create and use what they create in personally and socially meaningful ways. Analyzing survey findings for members' overall technology use (breadth and depth of use technology use, competence, and technology for school use), members who visited Clubhouses more frequently and stayed for longer scored higher overall in technology fluency, with 55% of members who visited every day scoring average or above compared with 39% of members who went only monthly. Likewise, 57% of members who stayed for longer than 3 hours scored average or above compared with just 44% who stayed less than an hour (Figure 6).

Figure 6. Overall Technology Fluency, by Visit Frequency and Visit Length



Yet the availability of technological resources is only part of the picture. "Access is not enough," says a Clubhouse Network leader, adding, "Access is just the beginning point, not the solution." Members become technologically fluent through their relationships—with coordinators, mentors, and other members—and the community built on these relationships constitutes the Clubhouse model. It is through these relationships that participants become progressively more capable of using the resources and developing the additional skills required for applying technology in projects and toward goals they find interesting and valuable.

Both members and staff provided abundant testimony regarding the technological capabilities members develop at the Clubhouse.

I learned software like Adobe Photoshop, Bryce 5, Painter 7, Director, Flash 5, ACID Pro, Vegas Studio, and Dreamweaver. But the most interesting software for me is the Dreamweaver.

In the past four years, I have learned software such as Adobe Photoshop, Corel Bryce, Flash, Acid Pro, and PowerPoint that have allowed me to contribute to events in the Computer Clubhouse.

A member's artwork was chosen to use on the poster for refugee week and was displayed throughout the area. As member's sophistication in the software develops, they begin to mix mediums and often use more than one program for a project (e.g. Bryce and Photoshop or Flash and Dreamweaver).

Technical training is not the primary goal of the Clubhouse. The overarching goal for all Clubhouses is to use technology as an occasion to support members' healthy development, including the development of skills, dispositions, and the community that emerges from members' collective participation. Technological tools provide an opportunity for learning of complex skills and, at the same time, the possibility of applying these skills in authentic situations across one's life. Technology is as much a means as an end in the Clubhouse model.

The rest of this section highlights the interrelationship between technical and other 21st century skills, recapitulating many of the broader themes with a more particular focus on technology learning.

Creating New Content and Products

Encouraging members to make the most of the opportunities and resources available in a Computer Clubhouse requires that coordinators and mentors meet them where they are and support them in moving along to new possibilities for growth and achievement. Their starting place is most often as consumers of popular entertainment media and products offered online. While the idea of making, creating, or producing is central to Clubhouse culture, members typically are not prepared to fully participate without support.

I think one of the problems with places like this is, there's so much high tech stuff at school and home, around them that they immediately go to where they are most comfortable, and that's to the Internet or music studio. I'm trying to get them excited about designing a picture in Photoshop, as much as they are about getting on the Internet. Kids do what they're comfortable. It's up to us to broaden their comfort zone.

More and more the children that are least likely to produce any work are actually producing work and want to do more. Less and less kids want to play games. Rather, they want a mixture of projects and games.

In [January] we started with Club members who were only here to chat, play games, listen to music, etc. We've changed the culture. Members have to design an online portfolio and keep track of their projects. Little by little the change is starting to result in more members getting involved in the creative process.

Members sometimes participate in Clubhouse projects where their creative work results in products that can be shared with others:

One of the most successful projects we had was our t-shirt design. Some of the members did not take to coming up with a logo design at first. Once they saw what they were going to do with it, however, they all wanted to get on the computer and make one. Several members made a design to be printed but only three produced a screen and a shirt. The first screen we completed was a blossom design. Two of our girls shared this screen applying different colors to each of their shirts, creating two different looks. Once the blossom was screened on, they allowed them to dry and added a few touches to personalize their shirts. This project was introduced toward the end of our summer program. A large number of our members come for the summer only due to the fact that they go to boarding schools or are with one parent during this time. These particular members saw this project as an opportunity to create a memento of the time they spent at the Clubhouse and had friends sign their shirts.

During the month of October our Boys & Girls Club built a haunted house which was run by our teens. One of our Clubhouse members used the computer to scan his work, set it in a grid, and use that as a tool to draw it freehand on a 6 foot tall wall. From time to time, this particular member will also bring in his hand drawn artwork and touch it up using Photoshop. Another of our members has been working on a music piece in the studio. He started off by playing with drum beats; cutting and adjusting the pitch. He added symbols to go along with the drums. After a week had passed, he called me into the music studio to show me what he had completed. To my surprise, he had been composing the percussion piece to compliment another piece he had been working on with his guitar at home. We are still working on getting his guitar piece recorded and added into the track.

The Computer Clubhouse also put together a showcase dvd for the entire Boys & Girls Clubs of the [region] for a Premier Night. The event involved youth and teens from all around the valley at a local theater venue. It was an opportunity for youth to showcase their movies from the past year. The event presented short films and animations that were created, edited and voted as the best from their Clubs. Films from every Club earned awards for their hard work and got the approval of their peers at the event.

Members also use technology for casual social purposes. Before joining the Clubhouse community, few have had the opportunity to create or produce their own media. The process through which Clubhouses move members toward engaging in new activities starts where they are comfortable. Building on their existing experiences, skills, and interests, however, the Clubhouse takes them to levels of accomplishment most could not have previously anticipated.

Creating a Local Television Presence (Clubhouse Visit)

Located in a major American city, this Clubhouse serves predominantly Cantonese-speaking youth who are either immigrants themselves or American-born children of immigrants. The members travel on public transportation from far-away parts of the city to get to the Clubhouse. According to the coordinator, members' attendance is quite consistent despite difficulties with transportation. Even at the time of a recent visit, when the Clubhouse was undergoing a large renovation, many members were present. During the renovation, most of the equipment was in storage, leaving only a handful of computers and a couple of foldout tables in place of the signature green table. Members were there anyway to meet each other, talk with staff, and, significantly, to continue working on one of the bigger ongoing projects—a local cable TV program broadcast every Saturday.

The program addresses a wide range of topics including health and safety, racial and gender discrimination, what to do after graduating from college, and the like. Members base the topics on surveys they have conducted to find out what issues concern youth. A smaller group of members write the script and create props for the show using PowerPoint and Photoshop. All Clubhouse members can participate in the discussions that are part of the show. The show represents and reflects the important role of this Clubhouse as a place of cultural belonging for members. Many of the members struggle with alienation and language barriers in school and society at large. Going to the Clubhouse gives members the opportunity to interact with peers and to work on projects, like the television broadcast, where they can articulate their concerns and interests.

The coordinator shared with us her observations about the impact of Clubhouse participation on members. The most notable and important change has been in members' sense of confidence. As their sense of belonging grows, so does their confidence, which helps them express themselves more openly and also leads to more active engagement with Clubhouse project work.

Participation and Engagement

Young people new to a Clubhouse are given the opportunity to jump in and participate in complex technical activities soon after they arrive. Large projects with a wide variety of roles to fulfill, such as video production, provide multiple possible entry points for newcomers:

Over one of the breaks, Ellis decided to help create a movie. The only problem was he wanted to be the actor. A new teen visiting the Club named Chloe wandered into the Computer Clubhouse looking for something to do. She came in and mentioned she was bored. Ellis asked her to be a camera person and he worked with the coordinator to discuss filming ideas and left with the teen in tow to go train her to be a camera person. They spent the next two hours filming around the hallways, front desk, gym and Computer Clubhouse. They spent another few hours recording and doing basic editing on the footage that they had taken that

morning. Several times they decided to refilm parts of the movie as they were not satisfied with how it looked. We all look forward to seeing how it turns out!

Movie Making - All members are encouraged to help with all parts of the process. They develop the story, type, storyboard, set up shots, film, edit, and add special features. They use Word, photo editing software, movie editing software, Publisher, digital cameras, digital camcorders, and the microphone. This is a two-month process and all members were consistently attending and had amazing enthusiasm.

Although members are given significant latitude in determining their own activities and course within the Clubhouse, fully engaging as a member means doing creative work. Although this work may take different forms (e.g., videography, writing, design, editing, or audiorecording in the case of film-making), it is active and is focused on the creation of something new in the world.

The general participatory model by which Clubhouses operate suggest that time and exposure will increase members' engagement in more challenging technological activities. Results from SRI's survey work bear this hypothesis out: Participation in Clubhouse activities results in the deepening and broadening of engagement with technological work. Technology use scales (measuring breadth, depth, academic efficacy, and self-assessment of competence) were positively associated with both frequency and length of visits to the Clubhouse. This outcome was similar for both boys and girls.

Examining the number and variety of technologies used (Figure 7), 57% of members who visited the Clubhouse daily scored average or above on measures of breadth of technology use compared with 41% of members who visited only monthly.⁷ Length of stay at the Clubhouse was also positively correlated with breadth of use: 58% of members who stayed longer than 3 hours scored average or above compared with 45% of those visiting for shorter times.

⁷ *Breadth* of technology use refers to the number of different activities a member usually participates in at least once a month. The highest possible score indicates that a member participated in all seven of these activities at least monthly. The seven listed activities were: make a design or picture; make a video or animation; design a Web site; make something in the music studio; create a game, toy, or robot; write a newsletter, article, or story; program MicroWorlds, Visual Basic, or Java.

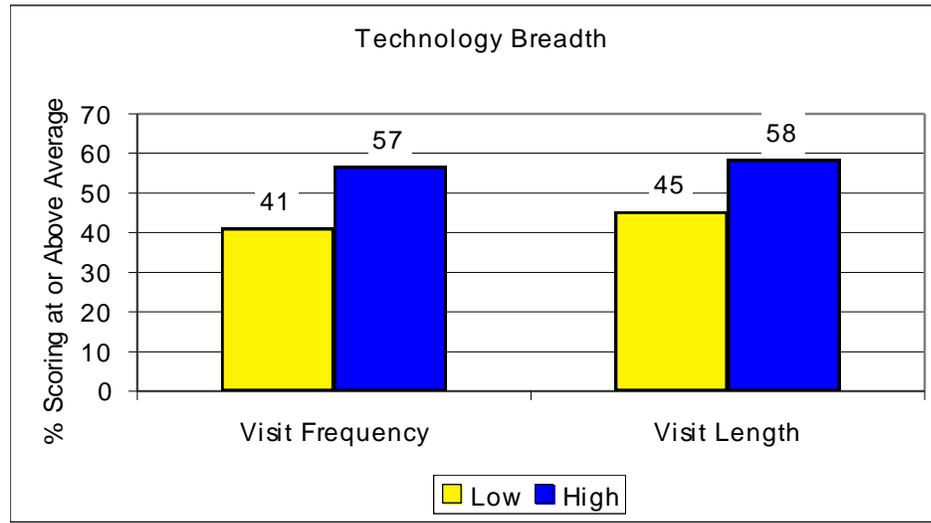


Figure 7. Technology Breadth, by Visit Frequency and Visit Length

On measures of depth of technology use (Figure 8), 56% of members who visited daily and 58% of members who stayed longer (3 hours or more) scored average or above compared with 44% of monthly visitors and 44% of members who stayed 1 hour or less, respectively.⁸

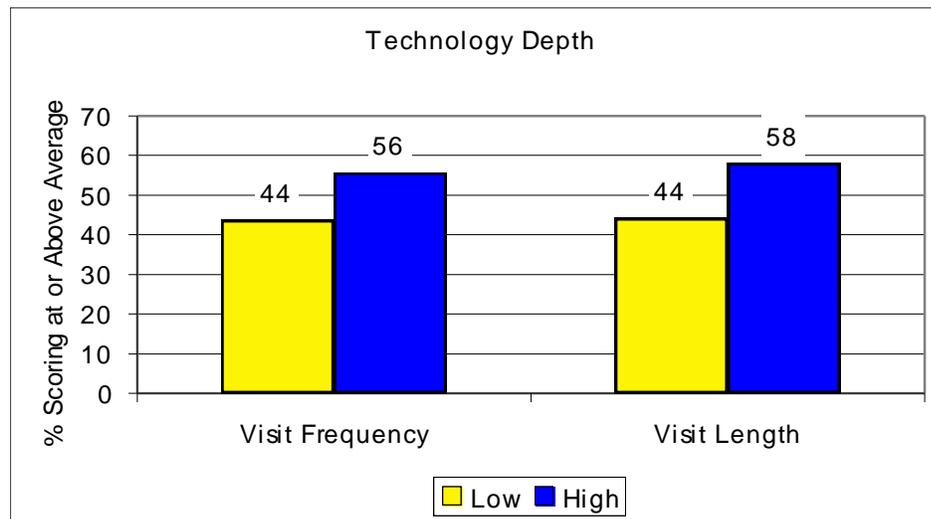


Figure 8. Technology Depth, by Visit Frequency and Visit Length.

⁸ Technology use *depth* refers to the level of engagement with the member's most frequent activity. The highest possible score indicates that a member participated in that activity every day.

One member described how his technological skills deepened in conjunction with other abilities through support from Clubhouse staff as he prepared for a citywide competition.

Last month, I underwent training at the Clubhouse for a competition about Electronic Project Proposal with the use of PowerPoint. This was for the STEP competition. This competition was participated by all public High School in [our city]. My coach, the Clubhouse coordinators and the mentor instructed me on making a proposal about a specific project like business men and professionals do. They also help me develop my speech and communication skills for its presentation. They taught me how to be confident. Luckily, I won 2nd place that made me so happy and fulfilled. It was a great experience. I have learned so many things. This is only one of the thousand wonderful experiences I have with Clubhouse. Because of my experiences at the Clubhouse, I already have something that will contribute a lot to my college and career plans.

Sharing Creations Openly

One way that Clubhouses foster a safe and responsive environment for learning and creativity is by setting an expectation of openness and transparency. These practices contribute to members' growth in a number of ways. Seeing one's own work posted on a wall indicates that it is recognized and valued by others. During our site visits to Clubhouses, we observed that members' projects were displayed in a planned and carefully designed manner, making the displays a legitimate component of the overall design of the Clubhouse. Displaying and sharing the work also inspire others and make clear to members that their work is a form of communication as well.

We showcase work on a more permanent basis using our "clothes line" and on a more instantaneous basis on our "Wall of Fame" bulletin board. We also encourage members to get signed up on the Village and post their projects. Empowerment happens usually in small groups such as Tech Team and Bake Tech, but several programs have evolved out of members' interests, such as The Ladies Room — a group of 13-15 year old girls who decided to start filming their own talk show.

Members, mentors, and coordinators all make things, and they make them in the open. By making the processes and the results of technological creation visible, the Clubhouse environment provides an impetus for others to participate.

When one member has a success with a project, it spreads through the community quite quickly (e.g. all the kids love doing claymation at the moment).

Members are trying out new software more often now that some key leaders have moved into new areas.

It is often found that once a new project has been completed, many more members are willing to do the project. Exceptional work in the Village from other Clubhouses is highlighted to members.

Submitting one's creation for others' judgment, a potentially risky action in other contexts, is common in Clubhouses. This collective activity functions as one way in which stakeholders create and maintain a collaborative and supportive culture (Soep, 2006). Publicly displaying

work (even work in progress) helps mentors and coordinators assure members that their work is valued and recognized by others in the Clubhouse.

In Clubhouses, achievement by some can lead to greater motivation for many. Examples of others' success provide reassurance and inspiration.

Artwork is always showcased around the Clubhouse walls. Members also vote on which older artwork gets to stay up as a testimony to the works others have completed and to make returning members feel at home.

The winter "Movies and Memories" movie festival was a conglomeration of works from the past year. The event allowed youth and teens to show off their artwork and video creations.

Many of our members are very talented drawers. We have some drawings posted around the Clubhouse. Most of the time our members take the camera out just for fun, but this past quarter we worked on a photography project along with our Club's Arts program. We used the digital cameras to take photos around the Club. Members enjoyed using the technology of the digital cameras as well as the 35mm disposables. After completing a few photos around the Club, a few members expressed interest in using the cameras on a camping trip which they were attending the next day. They were given disposable cameras so they could take pictures of the landscape and snow up north. The photographs have been on display in our lobby for the past several months.

Learning Technology Collaboratively

Not only are the artifacts that members produce sources of inspiration for others, but members actively support one another in learning new technological skills. Peer support is a cornerstone of the processes through which members learn technology.

Members here like to teach each other any new program or skill they learn. It is like a thrill to them to show other friends what can be done with each program being learned.

The social bonds in the Clubhouse are remarkable. Members become friends in no time and they support each other no matter what. Not only in mastering software but also in playing games.

We have tried to foster a Clubhouse environment where members are not afraid to ask questions of other members as they learn the same software. Our older members have become good peer assistants and are helpful with large groups.

The Clubhouse culture encourages an ethic of giving back. Coordinators and mentors foster an expectation that participants will learn and, in turn, use what they have learned to support others' learning. From one moment to the next, everyone is expected to move smoothly between roles, depending on the circumstance. In the Clubhouse, there is an excitement about helping others learn—and an understanding that one's own learning process is not complete unless skills and knowledge are shared with others.

Both Sara and Jessica visited the Computer Clubhouse members several years ago. Upon coming back to the Club these two sisters have taken up roles as jr. mentors and help assisting with younger youth. Over the past quarters, they have focused on developing

knowledge of technology. It seems like as soon as they learn something they have to pass it on. They have guided twenty to thirty members into working with Photoshop and PowerPoint.

I had the opportunity to work closely with Sammy two years later, at the 2004 Teen Summit. Bobby, not surprisingly, signed up for the Robotics track, and in the span of just three days created an impressive collection of robots.... The leader of the workshop (Dan Wiggins) suggested that participants create robots/machines that would roll along a cable strung across the room (like a tightrope). Sammy quickly built a machine that "walked," hand over hand, across the cable. But Sammy did not just create his own robots at the Teen Summit workshop. He also served as an expert resource for the other participants. He was always happy to share his expertise, helping other workshop participants develop plans and fix bugs in their own robotic constructions.

In our recent site visits to several Clubhouses, the research team observed older members taking highly active roles helping younger members with technological support, volunteering to coordinate solutions to problems, and giving advice on how to use the computers. This was particularly notable in Clubhouses where the coordinator was temporarily off site and no mentors were present. Older members both supported younger members and took on more significant leadership roles. Members often also appropriate the practices and values of their Clubhouses to the point where they take on completely different roles from those they started out with when they were new members. One coordinator told the following of a member:

And then there have been kids who have been there for a while and just their attitude is changing.... These two brothers have come in. And the younger one has been a big trouble maker. Not real bad, but.... When I first started he was really hard to work with, and, just recently, his brother was watching video on YouTube or something like that. And he was like, "you can't watch that, that's really not appropriate." And I was, like, wow, because he used to be kind of like the instigator.

A member reported:

In the CC, I always try to give a great example to the youngsters. I try to teach them about computers and I sometimes help them with their homework. Mrs. Dumas can count on me whenever she wants. She knows that whenever she needs me I will be there. I help her with the kids, I help her with after school activities and I especially help her with events that are hosted at the Clubhouse.

While members often undertake individual projects, it is common for them to engage in projects that require the talents, skills, and participation of a number of different members. Coordinators from across Clubhouses described group work at the Clubhouse:

Some of our most popular activities are movie making and game making. Both require the use of multiple types of software, a ton of dedication and creativity, and are often very intense for a long period of time. We are building a Movie Making Club and a Game Making Club to help inspire these youth to continue with projects that are at the edge of their abilities.

All the projects mentioned above have been group initiatives. Members have exuded confidence and have enjoyed all the activities in the process of completing the project. Members have great faith in the staff and mentors and they, in turn, share an excellent rapport with them.

Recently we've done movie projects that require a lot of teamwork. It's good to see personal barriers shatter and work getting done. Also it shows how some members set the tone and how other members learn from that tone.

We do lots of teamwork. And we have loads of fun at all ages. And our members have a natural way of teaching each other a trick or two.

The members have been working on a Clubhouse movie where they are each responsible for a specific section (i.e. editing, music, choreography, set design etc.) They then come together with the members or groups to plan and create sections of the movie. They also work together to put all the pieces the movie. The members have learned to put together a movie and how to work with a team to complete a project.

We have programs and collaborations in which a "team" format is used. Members learn to work together and battle through adversity that a team work environment might bring at times.

We have several activities, such as the movie making, that require the participation of several members. All the kids were really involved with each project and were all excited to work on all the "group projects."

Teams are needed for large complex projects. In undertaking these types of projects, a variety of skills, including technology skills, are brought to bear. This feature of the Clubhouse environment makes it more like a professional community than a formal educational setting.

Linking Technology, Identity, and Development

Technology-supported activities provide members with new ways to understand themselves and their experiences through creating autobiographical stories and images. In one project, members worked together to create a film that communicated their experiences of living with war and poverty. Making full use of the Clubhouse's social and technological resources, these members worked together to weave individual stories about a shared experience into a group narrative. The coordinator explained:

Last summer workshops worked with 45 kids from the refugee camps, and from the neighborhood around the Clubhouse. They were 10-16 years old, worked in 6 groups, each with 5-6 members. Each group was mentored by one or two mentors. It was ten days. The first day was for facilitators to train them, how to do it, use the cameras....They talk about a real story from their own lives—courageous moment, sad moment, a dream. Something that will touch you or send a message.... They started by coming up with one story, to do film around. Each member has to tell a story, important for the film. One group joined all stories in one movie. One story as major scene: a basketball game, each one you give the ball to will catch and think about his story. It's called "Victory." The basket ball game is like if the kids came from another country. Told they can't play basketball, but they say we will win. They

push the game forward. At the end, they scored and win. Each story was written on a piece of paper. They made the storyboard, discuss with all groups and share ideas, comments. After that they start with cameras, angle of light, etc., preproduction, after-production. They finished the shooting on the ninth day; 11th day was screening day.

Other coordinators provided accounts of similar activities:

Digital Storytelling Workshop recently sparked interest in members to relate an important story in their life through photos and narration, the subject was deeply personal and the members used creative, innovative, ways of telling their story.

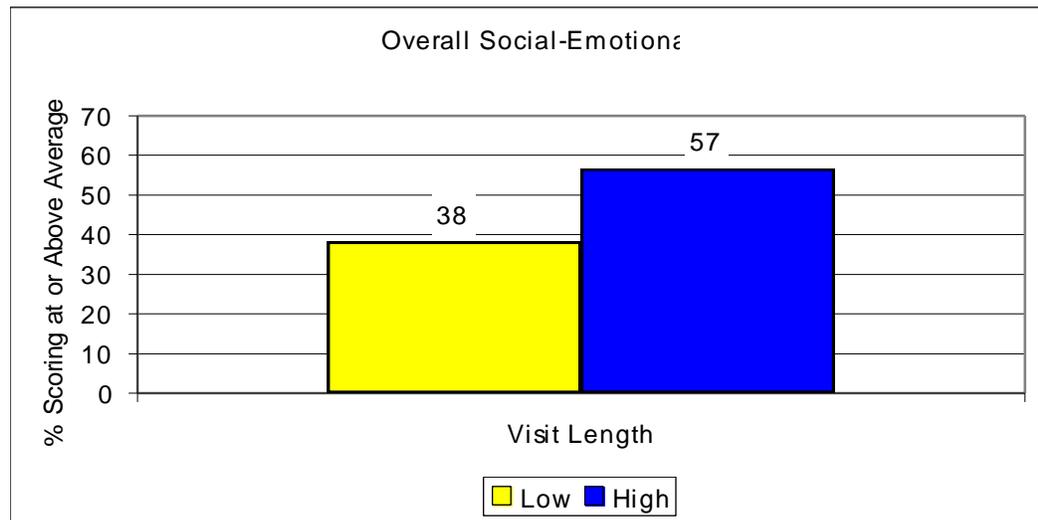
Both groups had to present their finished products to a panel of judges. The younger members produced a news broadcast. They prepared a script, filmed their skit in front of a green screen and then utilized Poser5, Adobe Premiere for editing and adding their backgrounds in green screen areas of the video, and ACID 4.0 for background music. The older group utilized morphing software to morph themselves into their heroes. As their images morphed their vocals speaking in the third person were played.

By creating external representations of themselves and important aspects of their lives, members are able to view themselves and others in new ways and sometimes alter their beliefs about and visions for themselves in the future. Creating and sharing digital stories enable members to reflect and observe their lives and activities from new viewpoints, with fresh eyes to see their lives in new ways.

Our survey findings suggest that engagement in creating technological products is significantly associated with important developmental outcomes. Members' overall social-emotional score (which measures collaboration, relationship with adults, sense of belonging, sense of the future, and social competence) showed statistically significant associations with greater engagement in key technology activities at the Clubhouse (including designing pictures, videos, or animations; making something in the music studio; creating a game, toy, or robot; or writing a newsletter, article, or story). Likewise, members' overall score for academic attitudes (including self-perception, problem-solving competence, and planning, and school engagement) was significantly correlated with engagement in a similar set of technology activities.

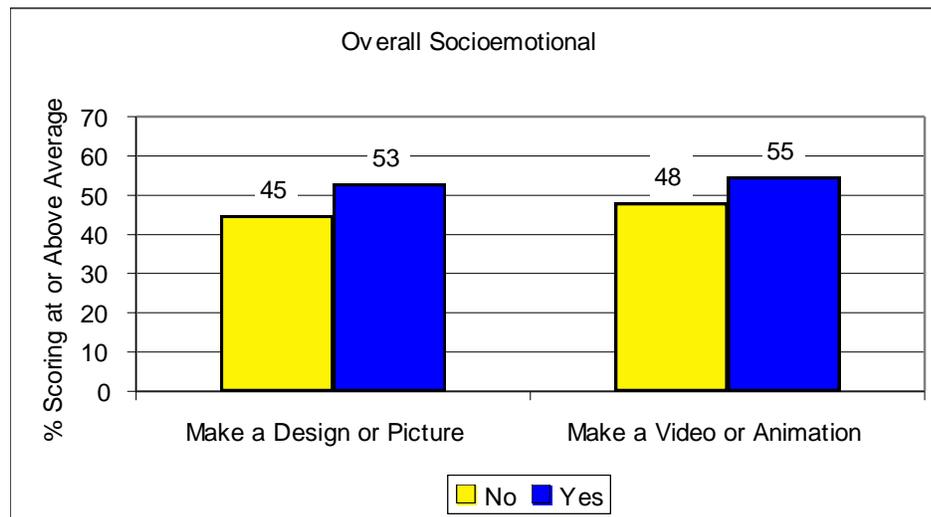
On overall social-emotional measures, 57% of members who stayed at the Clubhouse longer (3 hours or more) scored average or above average, whereas 38% of members who stayed only 1 hour or less scored average or above (Figure 9).

Figure 9. Overall Social-Emotional Development, by Visit Length



Specific Clubhouse activities were also positively correlated with overall social-emotional measures (Figure 10). Specifically, 53% of members who reported making a design or a picture scored average or above on the social-emotional scale compared with 45% of those who did not. Of the members who made a video or animation, 55% scored average or above compared to 48% of those who did not.

Figure 10. Overall Social-Emotional Development, by Picture Making and Animation



Similar differences were apparent between members who worked in the music studio and those who did not: 55% versus 48%, respectively (Figure 11).

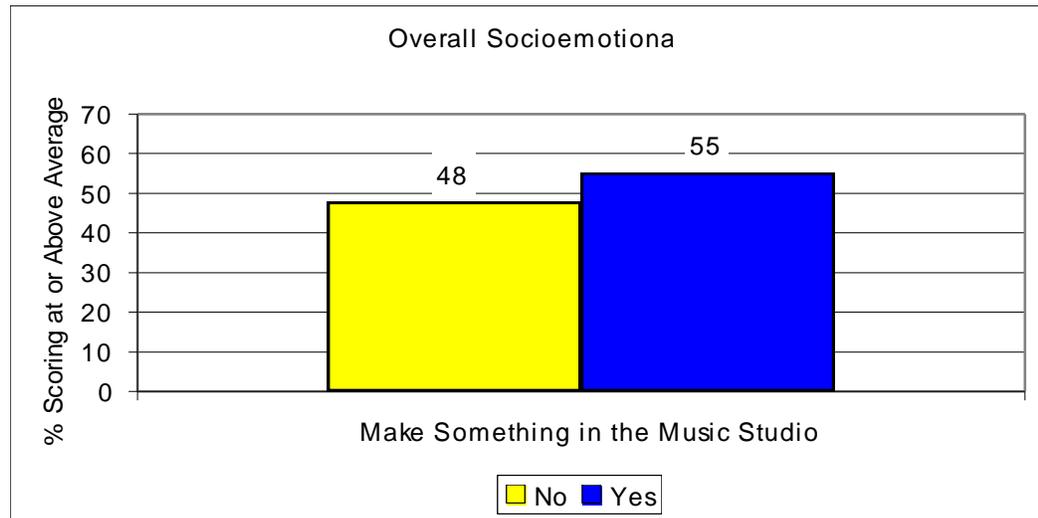
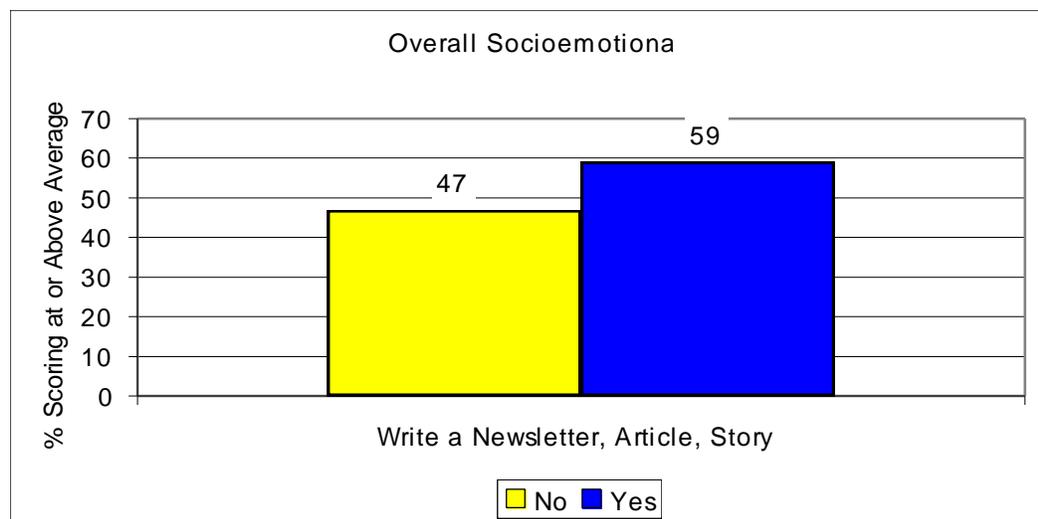


Figure 11. Overall Social-Emotional Development, by Working in Music Studio

Narrative practices in the Clubhouse activities had impacts as well (Figure 12). Namely, 59% of members who made a newsletter or wrote a story scored average or above on the overall social-emotional scale compared with 47 % of members who did not.

Figure 12. Overall Social-Emotional Development, by Writing



There were also effects in the academic area (Figures 13 and 14). On overall academic measures, 56% of members who stayed longer at the Clubhouse (3 hours or more) scored average or above compared with 44% of those who stayed for shorter periods. Of the members who wrote a story

or a newsletter, 62% scored average or above compared with only 48% of the members who did not.

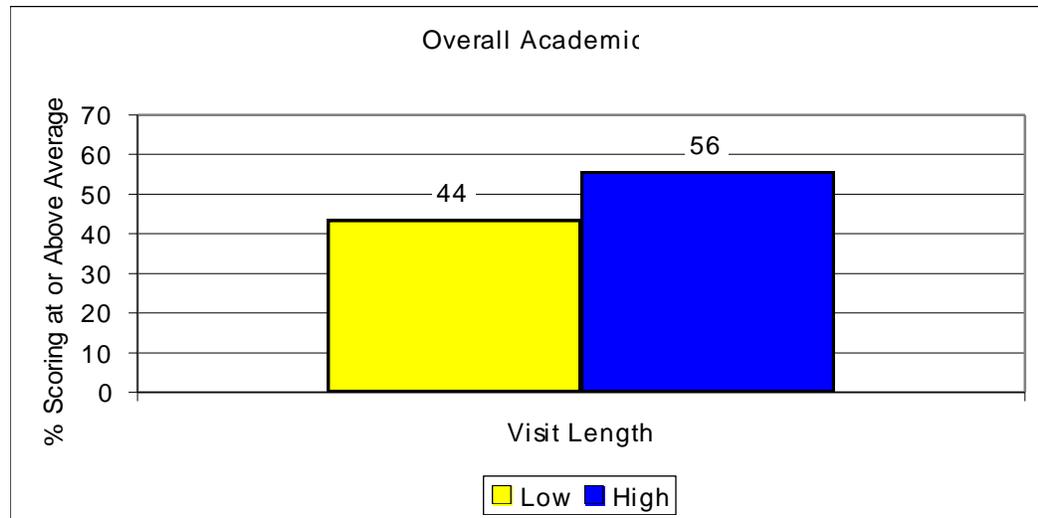


Figure 13. Overall Academic Development, by Visit Length

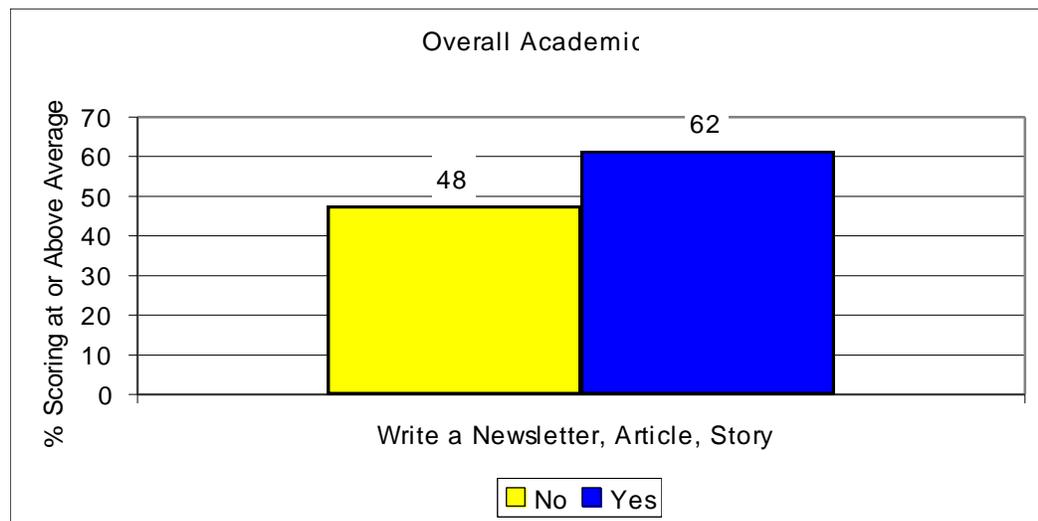


Figure 14 Overall Academic Development by Writing

Focusing on Projects

As members invest time and effort in their projects, they begin to concentrate less on the

particular hardware and software technologies themselves and more on the project as a whole. In this context, technology is a means for members to realize their ideas while working on projects. Coordinators report that members sometimes forgo technology altogether, depending on what creative idea they are pursuing. Since the demands of the interests and the projects define the tools to be used, projects often incorporate diverse technological tools, and sometimes other, non-technological ones.

We try to showcase and encourage projects that require the use of more than one technology, such as image projects that use a digital camera or a scanner and Photoshop. We also had great success last year with our Young Activist Network group in the spring, who identified littering as a problem in the community, then developed an event (the Trash Olympics) to combat the problem and create awareness. This group not only used many different tools and media to complete the project (MS Publisher to create flyers, Photoshop to create T-shirts, and still and video cameras and software to create a movie about the experience), they developed a plan (with mentor and staff aid) to try to solve a complex community issue.

As member's sophistication in the software develops, they begin to mix mediums and often use more than one program for a project (e.g. Bryce and Photoshop or Flash and Dreamweaver).

Coordinators and peers reported that members commonly integrate multiple hardware and software technologies as needed when taking on a larger project or purpose. This style of technology use is more typical as the Clubhouse staff and the members themselves gain experience.

In many cases, members discover something about themselves that is much more significant than their mastery of technology. Inspired by particular software or resources, members often come to realize something new and important about themselves—such as an interest in music production, a talent for graphic design, or a passion for creating narrative films. This realization has implications for how members see themselves and the choices they will make about their future, a greater benefit than simply developing a facility with any particular piece of software. For example:

In the Clubhouse I let my spirit fly through melodies, rhymes, and life problems. From these tears of happiness a project called "Creencias" — "Beliefs" — was born. This is a complete project written, recorded and mixed by me. This project was created step by step using ACID Pro, Reason, FL Studio, Adobe Audition, and Sound Forge. It has 13 tracks, each track has some of the things I see in the society, I sing about my city, my country, my streets and my personal experiences transformed into pieces of advice. I took about a year and a half to complete this work. During this time I learned a lot. Pamela Perez (Former C2C winner) designed the labels. She understood what I wanted with the cover and did a great design. I decided to call the album "Beliefs" because most of the time people don't believe even in themselves. My nickname...comes from a native language and it means "Warrior," because to live in this world you have to be a complete "warrior." When I finished the project, I realized that with my work I was changing some thoughts about hip hoppers and when people listened to my music, they could change their opinions about them. That is why I decided to help other boys and share my knowledge. During this year I have been mentoring others,

teaching them the basics of recording and mixing music. I believe that most of the boys and girls of our community want a better country for every one of us, including the hoppers.

In members' descriptions of their Clubhouse experiences, we see how personal growth, use of diverse technologies, interpersonal communication, and mentorship all come together in their projects. As a type of structured learning activity, projects often work to bring members out of themselves, to change how they think about themselves and their interests. Leveraged by social support and technological resources, the project becomes an opportunity for members to reinvent themselves and their perspectives (Brown, 2004; Gresalfi & Cobb, 2006; Hull & Greeno, 2006; Nasir, Rosebery, Warren & Lee, 2006). The data we analyzed provided many examples of how project work gives members this chance to grow. One coordinator said:

There was one guy who would just come and use MySpace on teen night. I started showing him some stuff. And he doesn't really use it that much, you can kind of tell. He's another one I didn't really expect to be into it. And then I started showing it to him. And he started out on his own projects. Actually on a really advanced program I've been trying to get everybody to try and nobody's really wanted to—3D Studio Max. And he started building a model of the solar system. I didn't say, hey do you want to try and do this?

When projects are the focus of an activity, members can overcome preconceived notions they have about the technology and their relationship to it. Such preconceived notions can function as barriers to engagement and learning. A coordinator wrote the following about a member:

One girl, as I started to show her Photoshop, she was like, wow, and then she said to me: "I thought computers were just used to type. I didn't realize that you could make stuff like this." And that was really neat. And she started getting really into it.

The following provides a vivid portrait of a young man developing technology skills, doing creative work, gaining cultural identity, and learning—all intertwined in the Clubhouse.

Most members at the Clubhouse have never been exposed to these kinds of tools (computers and the software and other related equipments before the opening of the Clubhouse). Therefore, the children have to be oriented to creative/artistic work for self-expression (a concept which will take a while to be understood). However, the mentors provide members with guidance to choose a subject/topic close to their interests and choices. Sometimes they are given a variety of options in the form of ideas, concepts, etc which they can build upon in their own style or manner they wish, depending on the software or tools they are comfortable with. For example, Ajay, who was at the Teen Summit last year, wanted to create an animation project on Flash. However, he could not come up with an original story. He discussed the matter with the Coordinator, who suggested selecting a story from Ramayana or the Mahabharata. The Clubhouse has an English version of the story. He was asked to give a try in translating and simplifying it in Kannada so that all other kids could watch and enjoy it. He was highly excited with this idea and has begun on this project in earnest. He takes great pride in this project and is constantly trying to improvise on it. Consequently, he is also picking up English reading skills through the project.

Through experience with various aspects of Clubhouse culture and by developing relationships with others, members learn to use technology to engage in meaningful creative work. his process begins with an expectation of engagement and participation that often results in members' sustained, deep involvement in projects. As this participation continues over time, members develop a sense that the work they do and the skills they build in the Clubhouse are important, that the people and place are important, and that they have a responsibility to contribute to and give back to the Clubhouse community, the last of these which will be discussed in a subsequent section.

Preserving Dreams (Clubhouse Visit)

This Clubhouse, part of a community center in a town 20 minutes' drive from a major American city, has a diverse membership that includes mostly African-American and Latino youth. Members participate in a wide variety of technology projects. During our visit to this Clubhouse, the Internet was down for a significant period of time, but members stayed engaged with a variety of other non-Internet activities.

Some of the activities members participate in are sponsored by the community center as a whole. For one of these activities, members were given the task of creating a device that "could be used during sleep." They worked in teams using various office supplies, cloth, wood, wire, and other craft materials to conceive of, design, and build their inventions. Staff also participated. Members shouted questions and encouragement and made jokes, but they also listened to one another and applied themselves fully—despite how easily they might have dismissed the activity as hokey. Geraldo, a member with street-smart attitude, rolled his eyes initially but stuck with the activity until the end. He designed what he called a "Dream Saver." Geraldo explained that in contrast with Dream Catchers, which keep bad dreams from finding you, his device was meant to save and replay your good dreams: "Say you're dreaming, and you're dreaming of frogs or horses or whatever. You want to save that dream, you know. Put that on playback. Well this device let's you do that."

Geraldo said that he has been coming to the Clubhouse almost every day for the last few years. He has used Photoshop to create flyers for the high school dance and has participated in the Clubhouse film and video projects. Lately, he said, he has focused mostly on the music.

The music studio is constantly occupied. Members can sign up on a sheet for an hour at a time, and the sheet is usually filled up for a couple of weeks in advance. Three members who often work in the studio said that without the Clubhouse they would not have access to the equipment needed to make their own music and record it. The three members work together as a group to make "feel-good" hip hop. Their music has no violence or explicit language. One of the composers explained:

It's the music we started listening to, so we wanted to make it too. It's about talking to kids our age. All they hear is gangsta rap—we want to bring our perspective, our stories. People need to remember that life is fun.

Accessing New Pathways

A broad area of outcomes the Clubhouse Network actively promotes are life pathways and members' capacities to follow them to success. The Clubhouse provides a place for the exploration of possibilities—many of them new. The basic way youth today learn about opportunities different from the ones immediately evident in their families, neighborhoods, and schools is through networks of association. Clubhouse members have access to a well-developed network of information and connections. They also have the support of their coordinators, mentors, and peers, and members often discuss possibilities and choices together.

In its examination of the impact of afterschool and community-based programming for youth, the National Research Council and Institute of Medicine (2002) identified key risk factors that can compromise youth's achievement of important developmental milestones on the path to adulthood. Included among these are limited opportunities to develop the intellectual and soft skills necessary for employment, minimal engagement in civic and social institutions normally required for full participation as a community member, experiences of intolerance that lead to alienation and withdrawal, and failure to make connections with the kinds of adults, peers, and social institutions that facilitate transitions from school to work. The means to counteract these effects, according to the report, reflect the features of the Clubhouse: opportunities for skill building, opportunities to belong, supportive relationships, and physical and psychological safety.

In the previous sections, we have noted that members can readily see the relevance to their lives of the skill building that the Clubhouse provides. Members value the development of both hard technological and soft personal skills, which can support their interests, hobbies, community engagements, school achievement, and friendships. Beyond the opportunity to develop these skills, the Clubhouse provides members opportunities to put these skills to use in public, often gainful ways. Knowing that what they are learning is relevant and having actual opportunities to put that learning to use can provide young people with confidence in their abilities and a positive sense of the future (Hansen, Larson, & Dworkin, 2003; Youniss & Yates, 1997). Members' relationships to the world outside, including those institutions associated with the transitions to adulthood, are positively affected by experiences in the Clubhouse.

Orienting to the Future

Many Clubhouse members speak of the change that the Clubhouse has made in their lives, reorienting them toward the future and toward hope for themselves and their families. These members become excited about what the future holds, having developed new aspirations, new realizations about their own capabilities, and new visions of what is possible for them. Members wrote:

The Clubhouse has changed many things about me, especially my aspirations.

Dreamweaver software that creates and built a certain website and it caught my attention by creating my own design and graphics. I realized that I have a skill in creating computer graphics that I have not yet discovered.

I plan to attend a 4-year college or university and major in computer engineering. I want to eventually own my own technology-based company that provides services to people world-wide and run a program similar to the Clubhouse.

I am sure of one thing, what I've learned, experienced, and taught inside the Clubhouse will forever remain in my heart. The things I learned at the Clubhouse help me to find a job even while I study; hopefully, earn extra income to be able to support myself in even in small ways. What I taught, witnessed and learned inside the Clubhouse has boosted my self-confidence. I learned skills that became useful while I pursue college. I know that whatever I learned will help me to reach my goals, help me to find a job and make me successful person someday.

The Clubhouse Network has developed a variety of activities to orient members to new possibilities and support them in taking concrete steps toward achieving academic and professional goals. A key aim for all these activities is to make plausible for members options that were previously difficult for them to imagine. Encouraging members to reimagine their futures involves familiarizing them with academic or professional possibilities in such a way that they can see themselves in ways they were unable to before. Making these new possibilities accessible in concrete, everyday ways can help members identify with the possibilities (Cross & Markus, 1991; Markus, Mullally, & Kitayama, 1997; Gidley & Inayatullah, 2002). Members learn about course offerings at colleges and universities, visit classes on campus, write resumes, meet professionals, try their hands at tasks related to diverse types of employment, and learn specifically about how the technology skills they have developed fit into the regular work activities of people in various fields. Coordinators described some of the ways they support the development of new orientation to the future:

Another activity we did was an online college search. Members did a search for colleges that met their interests. A profile of the college was printed out for a library which we are going to start. The next activity we have planned will take these profiles and find information on the school such as deadlines and forms needed to enroll.

On a monthly basis, the Clubhouse coordinator will ask a college representative to speak to the members about college opportunities and future goals for themselves.

We have a program called Career Launch that assists our teens, especially juniors and seniors, who will be attending college. The program guides the teens on financial decisions and scholarships.

This past summer a few of our teens participated in our summer work program. As part of this program we had staff meetings and several workshops which were open to all teen members. As this program continued into the school year we have been working with our CBO [community-based organization] to provide career-oriented workshops for our members. During this past quarter I took several teens to [our] state university for their annual "Meet the Greeks" event. This has since sparked interest in having college students visit the Clubhouse.

Resume Writing workshop: Staff from the local youth home came to the Club to facilitate this workshop for the teens. They looked up job descriptions in fields that interested them and tailored they resume to fit the job. The teens also created academic resumes.

We have opportunity for our members to get college/career oriented. Our host organization has dedicated staff to help our members with college/scholarship/career information thru classes, guest speakers and field trips.

Once a month a career-based speaker or activity occurs to encourage the lifelong learning process. The topics for the workshops are as diverse as resume writing to fashion consulting. Over the past year, the teens visited a college and participated in various sessions on career skills and life seminars. One banking institution came in and presented on finances, banking and check balancing for a week. The results of the presentation were amazing. Many of the youth and teens enjoyed the fake checking and math activities. The youth self-reported learning a lot about finances and money.

Our high school graduating class is now going to colleges with a very good amount of computer-related skills. All of them are very optimistic, and excited, about their futures.

Our quantitative assessment of Clubhouse outcomes shows strong effects for members' sense of their own futures (Figure 15). A sense of the future was significantly stronger for members who stay longer (3 or more hours), with 58% scoring at or above average compared to only 44% of participants whose visits are shorter (less than one hour). Sense of the future was also significantly stronger for members who visit more often (55% versus 49%).⁹

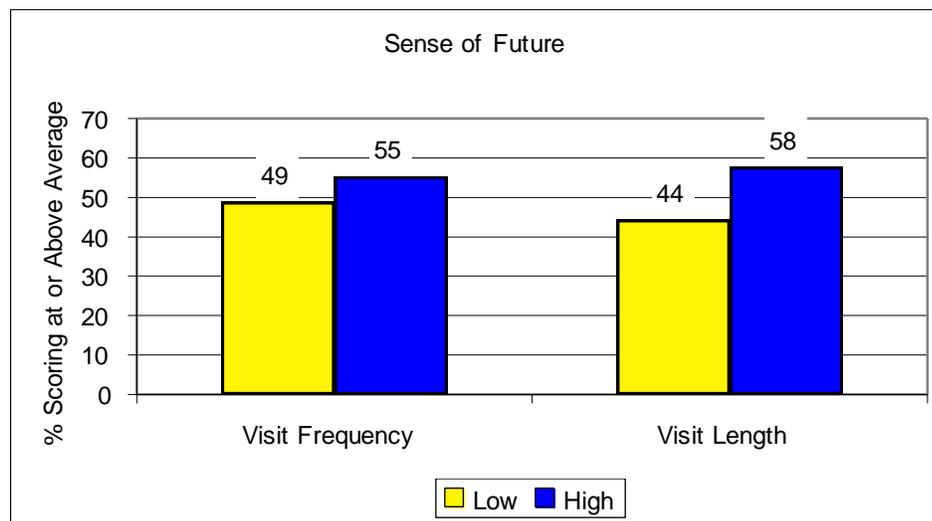


Figure 15. Sense of Future, by Visit Frequency and Visit Length

⁹ There are some potentially interesting correlations between outcomes on the key measures and technology activities. For example, among members who engage in some type of writing activity, such as creating a newsletter, article, or story, 58% reported having an average or higher sense of the future compared with only 50% who did not.

Engaging with School

Members of all ages said they are interested in staying in school and spoke of a love of learning. One coordinator reported: "Some teachers tell us that the membership of the Clubhouse seems to have a positive effect on the members." High-schoolers choose college; one member even spoke of a "lust for college" in relation to his Clubhouse experience.

In the summer of 2004 I was granted the opportunity to represent the...Clubhouse at the Teen Summit in Boston. That experience gave me a taste of dorm life. When I returned home I'd developed a lust for college that needed to be fulfilled...

This passion to continue with postsecondary education comes in part from the new sense of personal possibility and identity that the Clubhouse promotes through familiarizing members with academic and professional environments. One member provided a poignant account of the role the Clubhouse had in supporting his reengagement with school:

I owe a lot to the Intel Computer Clubhouse. In the 2 years I have been there, I learned a lot, not just about computers but myself. As a result of the positive reinforcement I stayed in school where before I did not care. The Intel Computer Clubhouse was my U-turn. Since then I have passed all my classes and made up for lost ground.

Youth participating in Clubhouse activities are strongly encouraged to maintain or increase their engagement in school and education. Some of the ways Clubhouse participation supports academic achievement are very immediate. Members are expected to attend school regularly and can, if they chose, do homework on site and receive tutorial help from staff. They also can apply what they learn at the Clubhouse to their schoolwork; one coordinator described how Clubhouse participation enabled a member to "take his school projects to another level" by using tools to express his ideas through varied representations. Members discussed the positive impact the Clubhouse has had on their grades:

Clubhouse has allowed me to use the knowledge in my academic life. For example: Since I learned these programs I have could get better in my presentations, so I have get good grades. Also my teachers and classmates need me for work extra-class.

When asked by one of her literature teachers to write a book report on Romeo and Juliet, Jarusha researched the topic, wrote a storyboard and then authored an interactive CD ROM, using Macromedia Director. The teacher was amazed at her multimedia skills....

There are times that we find members using a variety of tools and media for special projects for school. For example, one of our members had a current events report for school. With our video camera's and video editing software, she turned her simple report into a news broadcast, her as the anchor person, and presented it to her class.

Throughout this quarter, the Club utilized an hour a day to assist youth in completion of their homework. Both the Computer Clubhouse and the Discovery Zone used this time to improve grades and academics and tutor youth in high yield learning activities.

In addition to many more immediate forms of academic support, the Clubhouse creates a broader framework in which members' academic performance is supported by the positive attention they receive.

As coordinator (and also Club staff), I have a great relationship with the Brightsleigh School system's principals, guidance counselors, mediators and teachers. Our members know that in order to be a member of the Club they have to be attending school daily. We seldom have a problem with this.

Our high school seniors seem to be very enthusiastic and confident as they finish their final year in school. They are all moving on to universities and junior colleges. They all seem to have a better understanding of their environments and are now equipped with skills necessary for survival.

Coordinators also look for ways to help members reach their education goals:

We see most of our members staying in school. They all have goals for higher education and careers. I have been trying to come up with a way to help those members who have dropped out of school. They show a desire to get back in there and finish. For some, the problem is truancy. For others it is teen pregnancy. We are currently looking into having the local health department do parenting classes for our young girls.

The town of [Corona del Sol] has one of the highest dropout rates for high school populations in [our state]. The Club facility hosts a alternative high school and jr high. Many of those youth and teens take advantage of the Clubhouse during their school hours, after school time and for assistance with school projects. Several teens have gotten kicked out of a local high school and have been directed to the alternative program via the Club. A majority of the teens at the Club attend either a local high school or are in the alternative high school offered at the Club.

Against a backdrop of low college participation rates for underserved socioeconomic groups, we find that 76% of members who visit Clubhouses daily planned to continue their education as opposed to 66% of members who visited only monthly. Similarly, 75% of members who tended to stay for more than 3 hours per visit aspire to future education as opposed to 66% of members who tended to visit for less than an hour.

The Youth Impact Survey shows that there are significant correlations between academic attitude scales and Clubhouse participation, particularly for members' school engagement and academic self-perception. Members' school engagement (Figure 16) was significantly stronger for members who stay longer (3 or more hours at the Clubhouse), with 57% scoring at or above average compared with only 48% of participants whose visits are shorter (less than one hour). School engagement was also significantly stronger for members who visit more often (56% versus 45%).

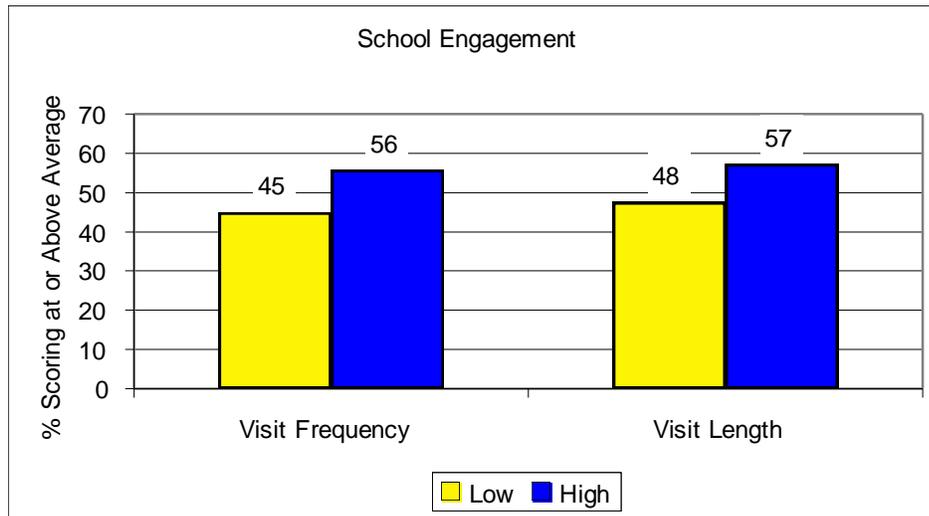


Figure 16. School Engagement, by Visit Frequency and Visit Length

We also find that members who spend time writing newsletters, articles, and stories (Figure 17) are more engaged with school (60%) than their peers who do not do these activities (49%). Although we cannot establish a causal direction for this relationship, it is interesting to note since it suggests that some Clubhouse activities in particular may support school achievement.

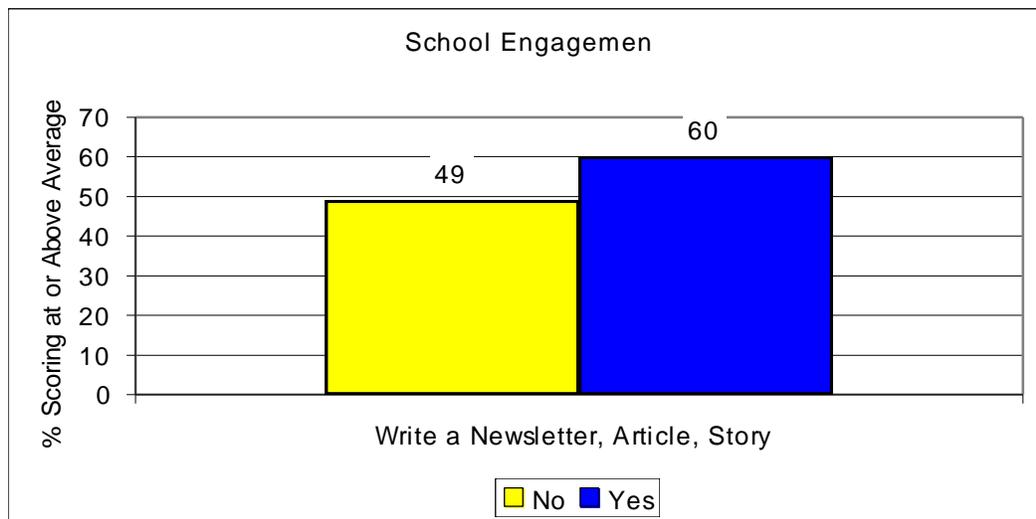


Figure 17. School Engagement, by Writing

Academic self-perception (Figure 18) is also significantly greater for members who stay longer (55% versus 45%) and who visit more often (54% versus 44%).¹⁰

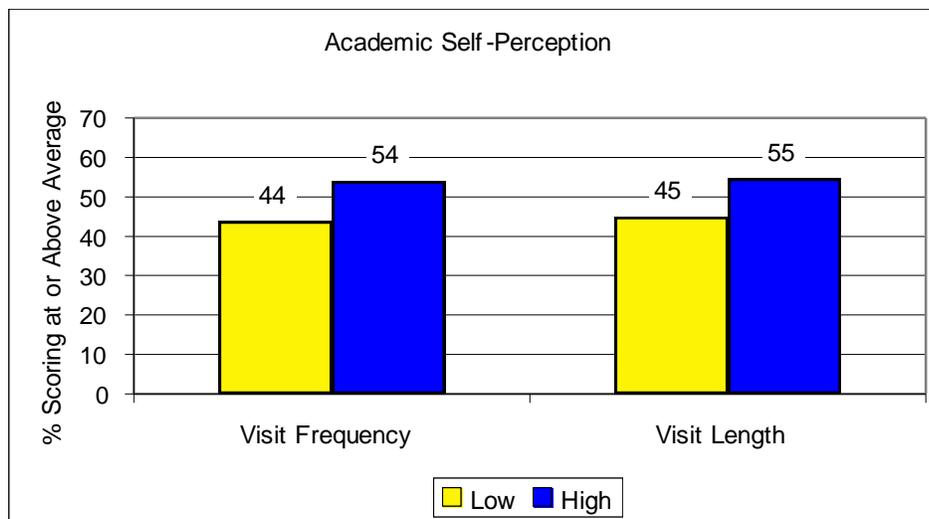


Figure 18. Academic Self-Perception, by Visit Frequency and Visit Length

Identifying a Professional Path

Another important way in which the Clubhouse contributes to members' life outcomes is through helping members identify new types of professional options. The Clubhouse provides members the opportunity to explore various fields and determine which fit well relative to their interests and the circumstances of their lives. Members described in some detail how the Clubhouse has helped them:

My academic goals are to study, in a national or international university (MIT). To construct robotics mechanism that help people in their lives, and to be an engineer in electronics and computer programming.... I have contributed to the Clubhouse, granting my knowledge to the others, since the Clubhouse opened to its doors to the children and young people, I occurred by the task of teaching them what I know, because they want to know about how robots obtained the movements and to know the calculations...

Clubhouse also finalized my wants in what course I want to take, before I want to take nursing but now because I'm curious about the computer I realize that I wanted to take up computer science and I want to be a computer expert for allowing me to teach the people specially the children who don't have enough learning about it, and also the big help and

¹⁰ As with school engagement, we see correlations between higher levels of academic self-perception and engagement in certain types Clubhouse activities. For example, members who spend time making a video or animation have greater academic self-perception (55%) than their peers who do not do these activities (49%).

importance of the computer. If I finish my college, I want to give it back to CC that provides me the basic concepts, pride and inspiration.

In this year, I finished my school and the Clubhouse too help me, because in the Clubhouse I decided my profession, based in all knowledge acquired in the Clubhouse, for example my characteristic to design in Computer, my characteristic to talk in radio.

A coordinator described similar outcomes:

We see most of our members staying in school. They all have goals for higher education and careers. Annually we have been working with Southeast Employment & Training Department to offer youth summer jobs. Those youth that come to work at the Boys & Girls Club gain experience working in the Clubhouse and often choose to stay once their shift is done. I have seen more and more of our teens participating in the tribe's program being asked to be placed with our organization. Along with employment, the youth receive training through workshops and classes from the tribe. A lot of the members who participate in their technology program share their skills with the members here and vice versa.

One Clubhouse alumnus, who is currently pursuing a bachelor's degree in health sciences, working part time, and completing a series of fitness certifications, attributed much of his confidence to his Clubhouse experience, saying, "Getting the Clubhouse scholarship really opened my eyes to the fact that I can get things that I apply and try for." He described the Clubhouse to Career program and information about other opportunities as invaluable: "Stuff like that you can find out here you can't find out elsewhere."

Commitment to Community and Service

One of the main themes and objectives within the Clubhouse environment is creating a sense of community—the kind of community that provides youth with the ingredients necessary for learning and development (Lerner, Lerner, & Alermigi, 2005; Mahoney, Larson, & Eccles, 2005; Rogoff, Paradise, Mejía Arauz, et al. 2003; Wenger, 1998). Clubhouse founders have used the term “emergent community” to refer to the Clubhouse’s community-building framework, suggesting that community developed from authentic interactions among participants in an ongoing manner. These interactions extend across Clubhouses, starting with trainings in which coordinators from around the world are brought together for a week of team building and sharing of best practices. Coordinators, in turn, are responsible for extending these norms into their home Clubhouses, encouraging members to work closely together and to share freely with peers, mentors, and other staff. Additionally, according to a coordinator, members are supported in efforts to “break beyond the wall of the Clubhouse”—reaching out and working in the surrounding community, with the broader Clubhouse Network, and also in society at large.

Members bring a diversity of interests, activities, and social issue with them to the Clubhouse. This diversity is reflected in activities and outcomes in different Clubhouses. Each Clubhouse is situated in unique social, cultural, and economic circumstances that shape its membership and activities. The variety of connections with surrounding communities and the nature of these connections affect the strategies Clubhouses use to meet members’ needs. These connections include collaborations with businesses and organizations; outreach activities; the inclusion of community members as teachers, lecturers, and mentors; and the outward-looking ambitions of Clubhouse members that result from the skill and confidence they develop in the Clubhouse.

Pride and Service Within the Clubhouse

An important outcome for Clubhouse members is the degree to which they develop a sense of pride in and ownership of the Clubhouse. Coordinators shared many stories about members taking responsibility for certain activities or tasks on the basis of skills they have learned. In one case, for example, a member was given the responsibility for maintaining the desktops for excessive icons and background changes. A Clubhouse staff member recalled:

He came in every day and never let a computer go unchecked. He later told the other members that this was his job and he could do it better than anyone. He is really proud of his work and through him other members have taken respect in the equipment as a serious responsibility for the Clubhouse.

Another coordinator pointed to an exemplary case, a member who “is really proud of his work and through him other members have taken respect in the equipment as a serious responsibility for the Clubhouse.” Members’ commitment to maintaining the physical space of the Clubhouse is seen in many examples:

The junior mentors and Computer Assistants helped to maintain both the Clubhouse and the Discovery Zone over this past year. They supported workshops in the Clubhouse and Clubs in other areas of the Boys and Girls Club.

Porter has been playing and creating with Legos since his first day at the Clubhouse. Recently, he has taken to assisting and requiring other youth to help clean and organize the Lego area after several rotations. It is amazing to see him walk up and ask and receive help from other youth his age in organizing and cleaning up even if the Lego mess is not from their own efforts.

One coordinator offered a particularly vivid account illustrating how much members develop a sense of belonging and ownership in the Clubhouse

One moment I remember with Khalil was...someone had walked by in the icy snow and had kicked stuff up on our front door, and there was some kind of dirt on it or something. And he just came to me one day and he said, 'you know, can I wash the front door'? And I thought this is amazing, this is a kid I have had a lot of fights with. He's had a lot of problems in school, and a lot of fights with other kids, much more so. And the degree of ownership that he is taking in the Clubhouse is great, and that can only be represented through that little anecdote. He wanted to wash the door....And he did, he washed the front door, something that he has probably never done at home.

These types of accounts reflect both the significant emotional connections members have with their roles in the Clubhouse and the degree to which they are integrated in the Clubhouse's social fabric. Coordinators frequently described the stake that members felt that they had in their Clubhouses: the ways in which members gravitate to the Clubhouse as a second home, volunteer to take on responsibilities or roles, and show enthusiasm about the relationships being forged at the Clubhouse. These descriptions were often phrased in the idiom of ownership:

Our members have a really high level of ownership in the Clubhouse. Our members take care of each other, teach one another and welcome the mentors.

Members also speak openly about the Clubhouse as home and a place where one can be part of "something big."

I also help my colleagues, especially when it comes to sharing my talents like how to do's in computer software that I know how to use. I also tell them that the Clubhouse is a second home where you can learn and where mistakes are not big issues — without those, self-confidence would not be develop.

When I entered the Clubhouse the atmosphere was one where I felt safe, confident, and like I was part of something big. After I entered the Clubhouse and became a member I was one of the first members to use and learn the software and how it works.

As members grow together with the community of their Clubhouse, they cultivate a sense of care and personal interest in their peer group that goes beyond their own interest. These instances are evidence of engagement and social connection that support their learning and make them well-adapted citizens. One coordinator wrote about a member:

During our in-house technology competition several teens scored better than others to go to the statewide event. One of those teens, Sergio, found out a few days after the competition that he would be unable to attend due to family matters. He approached the Clubhouse coordinator in a professional manner to let him know that he wanted to go but

would not be able to go to the event. He had suggestions on other teens that could go to the event and that he would help to prepare the person taking his spot. We had several teen alternates who were able to go. Lorena agreed to take his spot and has worked with him a little to prepare for the event. It has been amazing to see Sergio care for others and try to do what is best for his team.

The pride members feel extends to the broader association of Clubhouses within the network:

Members will teach each other what they have learned, sometimes at my request and most of the time on their own. They are very helpful to me and to others and although we often have disputes over rights to computers, as we have many more members than computers, most members are able to work together or swap time on the computers. To date, we have sent a representative and in most cases more than one representative to all network-wide events including Annual Conferences, Regional Conferences, and Teen Summits. We have always had a strong sense of pride in being a part of the network.

Our qualitative findings are generally supported by Youth Impact Survey results. For example, 54% of members who participated in Clubhouse activities daily scored above average on an item that measured sense of belonging compared with only 40% of members who visited only monthly (Figure 19). Likewise, 56% of members who visited for an extended period of time (3 or more hours) reported an above average sense of belonging compared with only 41% of participants whose visits were shorter.

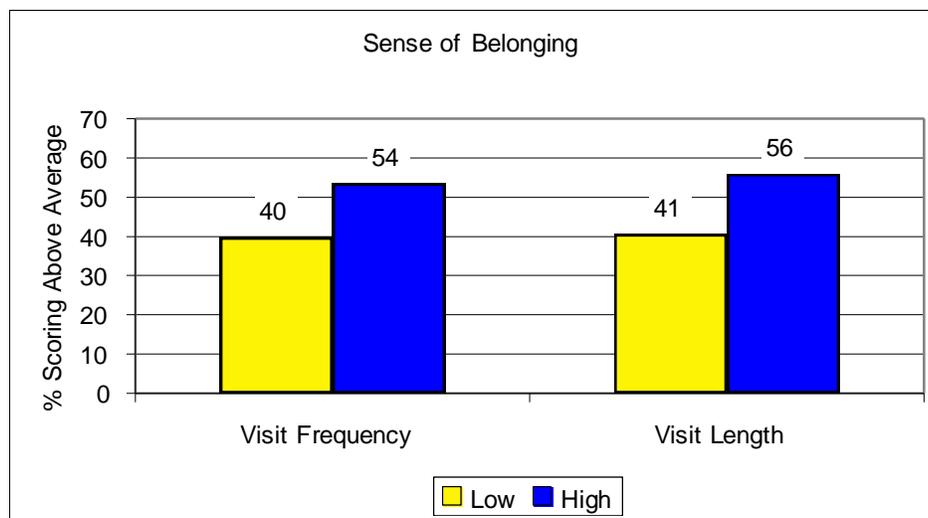


Figure 19. Sense of Belonging, by Visit Frequency and Visit Length

An active strategy of cultivating members' sense of having a stake in the Clubhouse and the community is a regular part of Clubhouse life. At one Clubhouse, one of the ways this is achieved is giving members important responsibilities in running the Clubhouse. The coordinator reported:

Members are given specific responsibilities weekly to ensure that the equipment stays functional. They are responsible for keeping the desktops clean from excessive icons and maintaining their folders. Everyone is responsible for learning how to use and set up equipment for themselves and other members. The expectation is that members will learn the importance of keeping things working and assisting each other. They respect the area and each other when they see how much work goes into maintaining the Clubhouse daily.

In some areas, members from several Clubhouses have contributed to the regional Clubhouse community by participating in marketing projects:

As far as collaboration, we have worked with various Clubhouses in our region to produce a marketing tool. Member work was submitted for a gallery to represent all of our Clubhouses.

Teens and younger members still working on the creation of a promotions dvd for the southwest Clubhouses. The dvd will incorporate scenes from all of the Clubhouses in the southwest. The idea is to create a tool that can be utilized for member recruitment, donor recruitment and mentor recruitment. The goal of the project is to create a professional quality video with collaborative materials from around the network. The first draft of the film was done in October. Several parts of the film are being re-cut and rendered to get the highest quality possible.

The junior mentors, teen mentors and adult mentors have helped assist or run over fifty workshops in the past year. All members are encouraged to assist and learn about everything in the Clubhouse from paperwork to guiding new members. As youth progress in the mentoring groups, they progress through trainings and workshops which assist in their acquisition of planning and career skills.

Service Beyond the Clubhouse Walls

The sense of pride, commitment, and responsibility cultivated within the Clubhouse also extends beyond the Clubhouse walls:

Julio has demonstrated his great capacity for teamwork and also for the investigation and individual experimentation (self-taught). He is one of the few members of the [Clubhouse] that participates in web specialized forums, where shares experiences and questions in the use and development of Flash and its components. Julio has designed and directed workshops for our Clubhouse members and other Clubhouses in Mexico, and for kids out of the Clubhouse.

Many members independently become involved in community service activities in addition to their participation in the Clubhouse:

She always helps out with community work. She is a happy, cheerful person that's full of spirit. As you know, there isn't that many activities to work with in this state especially with the situation, but as soon as there is an opening for help especially with the needs or the homeless she always the first to offer her help.

Pedro has been in charge of the school radio station, has participated as a violinist in his school orchestra, has also been in charge of the logistics of audio and sounds in several school events, has designed multimedia presentations for specific events of the music workshop he is

in, and has as well developed mixes of electronic music and other hybrid sounds for scholar events.

Clubhouses provide organized opportunities for youth to become involved in community service and other outside activities:

The Clubhouse also serves as a bridge to other opportunities from which the members truly benefit. Through the Clubhouse, I become aware of different community-based activities which I can join. Since it is affiliated with Intel, it has many connections. These two organizations share their luck with others and help communities through activities such as "Intel involved in the Community." By participating in these activities, I get to better develop aspects of my personality such as knowing how to interact with people.

Our Club has had outside organizations and companies come and ask our members to design flyers, invitations and business cards for them. This gives our members a sense of importance and satisfaction that their work is being used outside the Clubhouse.

Often, Clubhouse members address significant community problems by creating projects that explicitly deal with these problems. In a Clubhouse in the Middle East, members have created an awareness program that focuses on teen health issues such as smoking. Members of a Clubhouse in Asia have addressed the issue of clean drinking water by conducting a community water survey, developing a plan for change, and convincing the local government to act. One member said:

By understanding their problem we created a model on community to show how the overall population in the community facing this water problem. To sought out the problem we called the honorable Chief Minister of [our city] and put these problems before her. She immediately called her concern department and put various pipelines in the communities which solved many of their problems related to water.

Larger societal issues are sometimes driven by very palpable personal experiences of Clubhouse members. One member, Amara, became interested in issues relating to health and health care after she found out how her father died in her home country of Ethiopia:

I changed my interest when I was fifteen after my brother told me how my dad died.... When my dad died there was no one who knew what disease killed him. He used to work in the animal skin factory that made shoes and clothes. He worked with some chemicals on the animal skins. In my country people don't have safety precautions for their health. He worked in that place for a long time—until the end of his life. This kind of thing made me change my mind and start having an interest in the health field.

Amara served as her family's interpreter on moving to the United States, an activity that she expanded to be able to interpret for other people in her community. At the Clubhouse, she has been considering starting a senior citizen program in which seniors would come to the Clubhouse twice a month to be taught computer skills by the girl members. In a letter of recommendation for Amara, a Clubhouse coordinator wrote,

I believe that with her creative mind this Clubhouse has opened many doors for Amara and the ability to bring technology and education into a community that has been paralyzed because of their lack of English and technical skills.

One member of a U.S. Clubhouse has been working as his Clubhouse's representative in the creation of a youth development center in an underserved part of the city. As a result of his work, the center will incorporate a drop-in Clubhouse like component in its media center. Staff wrote about his initiative, saying:

Without his input the Media Arts center would have only provided classes. Lester has taken it upon himself to spread the drop-in Clubhouse learning approach to another organization in [the city]. His input profoundly impacted the way [the project] had planned to serve youth and potentially will affect thousands of [city] youth.

Youth Development Processes in the Clubhouse

In discussing key Clubhouse outcomes—21st century skills, technological fluency, access to new pathways, and commitment to community and service—we have described the features and processes Clubhouses have established to promote these outcomes. These descriptions are intended to provide an understanding of the nature of the outcomes and the experiences that help shape them. The remainder of this report focuses more directly on identifying critical *characteristics* of the Clubhouse that promote outcomes and on providing insights into the question of how the Clubhouse affects the lives of youth as it does.

This analysis explores how the Clubhouse provides a unique niche in members' *ecology of learning*—the resources, relationships, activities, and structures that together constitute the opportunities to learn available to members (Barron, 2006). The analysis also shows that the characteristics of the Clubhouse generally align with research findings regarding successful community-based organizations (CBOs). In her extensive study of community-based organizations that cater to youth, McLaughlin (2000) has shown that youth who attended programs offered by well-organized CBOs were significantly more likely to report better feelings about themselves, higher levels of self-efficacy, and a greater sense of self-worth, personal agency, and other critical indicators of development and academic and social growth. McLaughlin's study points out that what makes these CBOs successful is their ability to respond to the diverse talents and interests of youth, to build on youth's strengths, and to provide youth with personal attention and recognition. She writes, "High-quality youth organizations are first or second families for many participating youth" (2005, p. 16).

Other researchers studying positive youth development focus on critical dimensions of growth (see, for example, Mahoney, Larson, & Eccles, 2005). Bers (2006) describes six domains in which growth in capacity leads individual adolescents on a path to healthy adulthood: competence, connection, character, confidence, caring, and contribution. The last of these refers to a young person's increasing inclination to participate in community and civil society as a regular part of his or her life. We have seen many examples of Clubhouse members giving back to the Clubhouse and to the community more generally, their contributions serving as some of the strongest indicators of the development of the full set of capacities.

In reviewing their personal narratives, we see clear evidence of members' growth in the content of the activities they participate in at the Clubhouse, the relationships they cultivate, and how they choose to imagine and use the skills they acquire through the Clubhouse programs. The "family-like" characteristics of the Clubhouse in many ways form the core of its success, providing a highly personal and individually tailored experience for members that motivates their deeper involvement in the activities as well as commitment to the well-being of the community. How this process occurs in the Clubhouse, some important dimensions of which we attempt to capture in the following pages, is similar in many key respects to the best programming seen elsewhere but with variations and complexities particular to its established approaches.

Trajectories of Greater Participation

Researchers have described the educational importance of members of a community moving from the periphery of an activity to increasingly more central and responsible positions (Collins, 2006; Lave & Wenger, 1991; Rogoff et al., 2003; Wenger, 1998). These types of situations tend to be highly motivating and engaging, leveraging social relations and authentic purposes for deep, enduring, and practical learning outcomes. In the Clubhouse, the primary trajectory of growth is typically members moving from the position of outside or at the periphery of a setting or activity to a more central or active role. Members often speak of being uncertain at first but then becoming more capable and confident as they become more experienced in the Clubhouse. One member wrote about her initial experiences at the Clubhouse and how she became recognized for her artistic achievements.

I kept coming and learning. And soon others began to notice...my art. For the first time I felt that what I did mattered to someone. And after a while I got good enough in all the software I could help people. The more I helped people the better I felt about myself. So I began to help out more and more I got trainings from IT professional so that I could help people better.

Characteristically, this member used her new abilities to guide others along a similar path, helping them develop their talents and skills through use of particular tools and then learning yet more specifically to be able to support members with less experience. Members receive the opportunity to develop what Peppler and Kafai call personal and epistemological connections to these activities (2006).¹¹ We see here a common pattern: As members move to positions of greater responsibility in the Clubhouse, they typically support others in doing the same. In some cases the responsibilities members assume go beyond providing peers with individual help, expanding to broader scale leadership at the organizational level of the whole Clubhouse. One member reported that as she developed her leadership skills she saw a need to draw friends in to help with Clubhouse leadership as well.

After being a member of the Intel Clubhouse for nearly two years as a team leader, I realized that our team needs to be more organized and well prepared to face the increasing challenges. By improving communication among team members, I envisioned a unified approach that could improve and expedite our help to the local community. With the encouragement of the Clubhouse leader, I arranged a brainstorming session for group of friends. From that session, an "Action Team" was created with the specific purpose of improving our performance in helping the new members of our Clubhouse.

By serving as a team leader, this Clubhouse member developed the ability to identify ways Clubhouse processes could be improved and to carry out those improvements. She thereby increased her responsibility and the influence she had on other Clubhouse members and the community. In the Clubhouse model, members progressively assume greater leadership roles, testing their own capacities, typically to grow in ways that are new and affirming to them.

Learning in the Clubhouse is social because it depends on the involvement of more capable others. Coordinators, mentors, alumni, other volunteers, and more experienced peers are all positioned in the social organization of the Clubhouse to address members' needs. Beyond this,

¹¹ These activities allow for personally meaningful artistic expression (*personal connection*) and experience of one's self as a capable learner and knower (*epistemological connection*).

activities are structured so that members can chose to join—in various ways, to various extents—according to their own interests and motivations. These interests and motivations are intrinsically part of the setting: what opportunities are available, who provides the support and how, what the nature of the relationships are, and many other factors that figure into what are traditionally considered individual interests and motivations. The logic of the Clubhouse is that the motivation to participate in a new activity, and therefore to learn, is not so much a characteristic of the individual as of the situation. In an optimal situation, an individual is invited to join, allowed to demur, and ultimately drawn in steadily, in easy stages, with all the necessary supports (Lave & Wenger, 1991; Rogoff et al., 2003). This type of learning is social because there are helpers, because no person is considered an island apart from a network of supportive others, and because the meaning, value, and relevance of the activities are always at play. It is also social because the learning is built on trust, as illustrated in the following:

Stephan discovered that for him, the Clubhouse was one place where he was not bullied or teased and where he had an equal chance of succeeding alongside his peers. Because of this, Stephan became an active, respected, and innovative member involved in many of the little “subgroups” that keep us diverse.

Our quantitative research corroborates the qualitative evidence that the Clubhouse provides extensive opportunities for members to move to deeper levels of participation as they spend more time there. Youth who have been members the longest are most likely to participate in more rigorous technological activities. Also, the practice of Clubhouses to shepherd participants toward engaging in more advanced activities seems to increase as Clubhouses themselves mature. For example, the participation rates for members designing websites and creating games, toys, or robots was significantly higher when the oldest Clubhouses were compared with the newest.

Charting Personal Progress

Helping members see their own trajectories of growth is an important part of Clubhouse strategy. One way members track their progress is by storing their projects electronically on a main server. While this may seem like a simple logistical matter, Peppler and Kafai (2006) note that having a secure space to keep completed projects, raw materials, and works-in-progress is key for Clubhouses to foster what they call design cultures. Maintaining portfolios of work creates an ongoing record of a member’s creativity, making it possible to observe change in quality over time. Members’ portfolios provide tangible evidence of their learning and thereby validate their participation in Clubhouse activities. Portfolios also document the chronology of members’ experience in the Clubhouse environment by preserving the outcomes of those experiences. A coordinator stated:

The members all have portfolios, ones which everyone can access to become inspired. And some have displayed immense growth in skills over the years. We still have members who joined in 2003 and they’re almost experts in some fields. As to sense of mastery, many members have found work which is directly linked to the skills they have achieved as a member of the Clubhouse.

Another coordinator notes the role of portfolios in demonstrating evidence of self-direction and increasing complexity in work product.

All members in both centres have physical portfolios. 142 physical member portfolios have been created and developed since February 2007 and all members in both centres have developed electronic portfolios. These portfolios display a wide variety of projects across the fields of Digital Art, Web Design, Music and Video Production, Animation and Digital Photography. From the developed portfolios, projects demonstrate evidence of collaboration and self-directed learning and enable coordinators and mentors to follow the progress of members' work and the complexity of their projects.

In one Clubhouse, the practice of keeping portfolios came about as an intervention and an effort to get members involved in a more structured way:

In January we started with Club members who were only here to chat, play games, listen to music, etc. We've changed the culture. Members have to design an online portfolio and keep track of their projects. Little by little the change is starting to result in more members getting involved in the creative process.

Portfolios are key for members being able "to look back and see how much they've grown."

The members' portfolios are showing progress... Fazel H. was using the Flash to animate simple characters but now he produced around 3 cartoon movies and the improvements are obvious.

Members provided various reflections on what they learn in the Clubhouse:

One of the mentors who graduated...left us a note of thanks. "It's Abel your best pal, well one of your best pals.... You know its funny how fast eighteen years can be. I just wanted to say thanks for letting me be a volunteer helper, even though I did not know much about kids, it was a fun ride and experience....You know life comes at you whether you ready or not. I'm ready for more because of this place."

I now aim for better living, to have a fine career, and the things I have learned in the Clubhouse definitely have become essential in defining my career goals and aspirations.

Quality of Social Life in the Clubhouse

The Clubhouse's social fabric is one of the main infrastructures for its learning model. One coordinator stated, "The goal of our Clubhouse is to foster an atmosphere of respect. This is a high priority for us and we feel we do it well." Members quickly come to feel that they will be treated with personal respect, a sentiment they often may not have in other contexts in their lives. Another important element of the social fabric at the Clubhouse is cooperation and reciprocity among members. One Clubhouse staff member wrote:

We fostered a Clubhouse environment where members are encouraged to asked questions of each other as they learn the same software (each one teach one). This works well as older members become good peer assistants and are very helpful with large groups.

Peers, mentors, and staff play a number of roles that support the cultivation of skills, engagement, and emotional growth in Clubhouses. Staff work to undermine the establishment of hierarchies (a Clubhouse Network representative said that when you walk into a Clubhouse it should be difficult to determine who the coordinator is among those engaged in the activities).

Staff also work to cultivate human resources for helping members connect to skills and ideas from society at large and to enable members to feel invested in the Clubhouse and, through its activities, the larger society. The Clubhouse is designed to be a space where youth have a sense of agency and can put that agency to use in making both Clubhouse projects and their own growth possible. As one coordinator expressed it, "Kids have learned that the Clubhouse is a place that they come in and do their thing. With the understanding that they have to act mature."

The holistic and contextual character of members' learning at the Clubhouse is manifested in many of their own narratives. Many members expressed the connections between technological skills, personal development, emotional affinities, and broader insights into their community and possible career paths. One member put it aptly:

By participating in these activities, I get to better develop aspects of my personality such as knowing how to interact with people. The Clubhouse really promotes learning, and is really a community for learners like me. Through this, I am able to explore the modern world. It has taught me to welcome new changes, and shown me what possibilities are out there. I have learned skills gained through workshops, lessons, projects, and the life. I have been able to develop myself in different aspects, from mental to emotional. I have learned to widen my views regarding my ambitions in life. I have discovered that I am capable of doing things I did not expect before. I am now hopeful.

When members talk about the technology skills they acquire, they often mention them together with reflections on personal growth, the cultivation of relationships, and the broadening of perspectives that occur in the Clubhouse. Bers (2006), Peppler & Kafai (2006), and others (see, for example, Cope & Kalantzis, 2000) describe technological fluency as an especially powerful form of competence building because of the impact and easy social transmission of digital representations.

Repeatedly, we see that the personal, social, and practical dimensions of Clubhouse activities, including technology use, are bundled together in members' stories: "I learned...not just about computers but about myself," "I learned not only how to operate a computer...but...how to cooperate," "the things I've learned...have boosted my self-confidence." Members' narratives reflect the integration of the social and technological aspects of what the Clubhouse is trying to achieve. In many commentaries, members see their acquisition of technological and life skills within a broader framework of personal development, a framework that reflects on the activities, features, and characteristics of the Clubhouse.

The collaborative and community-building efforts inherent in Clubhouse activities are embodied in the layout of the environments themselves. Clubhouses are often physically set up so as to cultivate community among members, staff, and mentors. A *green table* is usually set up in a prominent area of the Clubhouse, a central physical feature of the Clubhouse space. The green table—sometimes referred to as the "village green"—is both a metaphor and an actual gathering place for nurturing the Clubhouse community. When members arrive at the Clubhouse each day, they frequently begin by sitting together at the table and having conversations with one other and with staff. Here new members are also introduced and given the opportunity to speak about themselves and their interests. The other portions of the Clubhouse are also arranged to invite collaboration. Computers are set up in clusters instead of rows, and chairs have wheels to make it easy for members to move around and watch each other work. The Clubhouse has an area with

community resources and a bulletin board with postings of jobs and other opportunities members can take advantage of in extending their activities and learned skills into the larger community.

Identity in the Clubhouse Community

Identity development in the Clubhouse begins with a norm of inclusiveness that is diligently enforced. Clubhouse coordinators take steps to ensure that new members feel welcome and that membership is open to everyone. One coordinator said,

We have disabled kids, kids that can't hear or speak. At the beginning, they might have awkward look, because they are different but we encourage them to just go on, and they go ahead and use most of the software.

Inclusiveness at the Clubhouse means that the environment is designed to make members feel safe: free of the labels, stereotypes, and unkind judgments that youth may encounter in many other areas of their lives. The role of coordinators is also important in this respect. Coordinators make the personal connections and can help facilitate the relationships needed to help a diversity of members feel comfortable enough to explore their creative potentials.

I want you to know, that wherever I go I will put highly the name of this institution, that one day opened its doors to me.

Coordinators pay attention to details that allow potential members better access to the Clubhouse:

Our facilities are handicap accessible and signage is posted throughout the Club. The computers have audio options where those youth who have trouble reading can have the screen text read to them.

We are fully handicap accessible and we are equipped to handle special needs youth and teens. We do not turn away anybody because of physical or mental handicap.

We try to have one-on-one workshops with our special needs kids. We also have staff members that specialize in working with special needs kids.

The Clubhouse is completely accessible to those who have special needs. They are absolutely welcome and steps are taken to ensure that the other members treat them right. Youth with special needs are included in every aspect of the Clubhouse, given encouragement and extra help when needed. They are a valuable commodity of our Clubhouse.

The Clubhouse is available and accessible during hours of operation. Upgrades to the Xp Pro operating system has helped with the accessibility features for some youth. The current coordinator speaks some American Standard Sign Language. Over this past year, several deaf individuals, wheel chair bound and various other special needs individuals visited and continued at the Clubhouse. Their visits helped members to learn to work together utilizing new ways to communicate and work with individuals with diverse needs. During this past year we have had many youth and teens with special needs, several of them have done amazing things with art and music in the Clubhouse.

The Clubhouse builds ties to the community as a way of creating continuities for its members. One Clubhouse in the southwestern United States, for example, builds ties with the ethnic heritage of its members:

During the month of January, several members of the Boys & Girls Club...made a trip out to the [ruins] as part of their [diabetes prevention] program. Ten Clubhouse members joined the members from the [Native American community] for a tour of the ruins. The purpose of our trip was to learn about the lifestyle of our ancestors... Members learned about what [they] did to stay active and healthy. The members took plenty of pictures and captured some video footage which was later used in the Clubhouse.

Linguistic heritage also finds a place for acceptance and expression in the Clubhouse:

Juanjo has conducted workshops for new members who did not speak English. Juanjo is bilingual, and is fluent in Spanish. It was great joy for me to see him flourish as a leader and empower new members. The new members felt welcomed regardless of them not knowing the English language.

For some youth the emergence and negotiation of identities can often be contentious and fraught with conflict. To become reconciled with one's sense of self and be able to express this process to others generates its own set of emotional and social skills that are important foundations for many forms of learning. Soep (2006), Hull & Greeno (2006), and Barron (2006) bring attention to the role of appraisal in youth identity formation. In interviews that Barron conducted with youth, she writes, "there seemed to be a set of questions that were being taken up in the course of learning: 'How does this topic fit with how I see myself and my future?', 'Does it allow me to extend my goals and create what I want?', 'Do I like the idea of becoming the type of person that does this?' (2006, p. 219)"

Becoming a skillful manager of one's own identity development is a 21st century skill that the Clubhouse encourages and cultivates in a number of ways: by offering tools for self-expression through media and technology, by fostering an open and safe social environment, and by providing social support. Many different types of identity come into play in the Clubhouse. One Clubhouse coordinator told of a member's religious identity:

He is the only one of two kids who is member of two Clubhouses. He came to ours because it was a calmer, more inviting atmosphere. He is 15, lives in a single parent family. The family is not Muslim. But Matthew decided that he wanted to adopt Islam. We don't do any religious programming at the Clubhouse, but we are a place that welcomes everyone, and more significantly than that, appreciates everyone. They say that tolerance is a great place to start. We really appreciate his uniqueness, which he is often honestly mocked for. He's a tall gangly kid who wears a head scarf – he's not going to go on the football team. And he is not going to be appreciated. But because of the unique abilities of the Clubhouse he can come to us.

This spirit of inclusiveness and development of identity also pertain to social and cultural norms associated with gender. Boys and girls interact together in the Clubhouse where outside the Clubhouse walls they might not. One coordinator said:

In my area, there are social clubs. And in the refugee camps there are like nations and all of the other associations. They make some kind of clubs. But those clubs, not everyone can go

there. You know its like a club full of big males, playing...the girls can't just go there and play. Depending on the culture of the country. They...are restrictions. The girls can't just play with the boys everywhere. Especially if there are grown ups. So for the girls it is more difficult to go to those places.... The good thing about the Clubhouse, it has everything, it's a safe place. All the parents all around know about the Clubhouse. Because we sat sometimes with the parents. And they come to the Clubhouse. We have a record for each member, so if we need anything for the member or from the parents, we want to take them for a field trip or something we call the parents. We have all the information, so we keep the parents on the track on the time, so they know, they trust the Clubhouse. They send their kids, boys or girls, to the Clubhouse.

One of the more intriguing findings of our Youth Impact Survey study was that for many of the outcomes the effect of Clubhouse participation is strongest for boys; one might surmise that boys in particular are receiving opportunities for growth at the Clubhouse that they do not receive elsewhere. Recent studies of adolescent boys' development seem consistent with a hypothesis that the nurturing, relational qualities of the Clubhouse might be especially important for young men (e.g., Spencer, 2007).

At the same time, because of its technology focus, many of the Clubhouses around the world have strategies for encouraging girls to work with technology and to create an environment that counteracts the gender divides that are prevalent in many societies. At one U.S. Clubhouse, for example, every Monday is Girls' Day; on Mondays, Clubhouse space and resources are dedicated exclusively to girls as a way to encourage their comfort and appropriation of technologies that are otherwise typically associated with males. At one overseas Clubhouse, boys and girls have begun to work together, which is something that usually does not occur in that region. This Clubhouse attributes its success in integrating girls in Clubhouse activities and transcending gender boundaries to its status in the community.

In the beginning, some parents used to escort their daughters to the Clubhouse and stay with them here, but they became so comfortable with the project that they have given the daughters the freedom to learn in this new, exciting environment. Overall, it is because of the fantastic feedback from parents, the great reputation of the [Community Center] and the ingenuity of the Clubhouse that we are able to create this environment.

Other Clubhouses noted the value of their programming and outreach for girls.

We offer Music Studio time for girls which is our most popular component of the Clubhouse. Also, in our video P.S.A.s we offer girl specific time and mentors.

Coordinators from around the world speak of the great impact they see from their efforts to encourage girl participation and engagement. Girls participate more and expand their areas of interest. We have near 50% participation from girls. I think this is because our space is welcoming to teens and the mentors and staff reach out to girls, encouraging them to participate.

We have good female participation because we provide relevant programs for girls. Girls are encouraged to participate in all activities.

The percentage of girls in the Clubhouse is over 50%. Girls enjoy coming into the Clubhouse because creativity is really encouraged. They are given a chance to put forth ideas and work to bring them to pass. If they want to do a large project, they will always find support from the coordinator as well as the other members. From its inception, the...Intel Computer Clubhouse has always had more female members than male members, and they have often times become the leaders within the Clubhouse.

Opening up new horizons of identity and future pursuits is a theme for all members at the Clubhouse. But achieving this can be particularly difficult for girls who, in many places, are not encouraged to think of themselves as users or developers of technological tools. One female member's story illustrates this well:

If someone was to ask me "What do you want to major in?" My answer would be computer engineering with a minor in Business. If I was asked the same question when I was in the seventh grade my answer would have been cosmetology. I thought that I wanted to work in a beauty shop and eventually open up my own beauty salon. I already knew how to braid and press hair, but I wanted to learn more.... I began attending the Clubhouse when I was in the middle of seventh grade. After being a member for almost five years the Clubhouse has allowed me to experience a lot of wonderful opportunities that have led me to change both my education and career goals.

One coordinator wrote about the impact that a girl in a leadership role can have on other girls:

Her being an active member is already a big contribution to the Clubhouse especially since she is a girl. I think her participation in various Clubhouse activities makes other girls want to participate all the more.

Issues of identity are integrated within the Clubhouse norms of service to community. Clubhouses address their programs directly to the pressing social and cultural circumstances of members' immediate community. This approach creates greater continuity between the members' identities, life conditions of the community, local organizations and institutions, and members' own perspectives on their ability to make contributions. The sense of social debt and responsibility toward younger members is a recurring theme in our data. Older members seek to contribute directly to the positive development of younger members through collaboration, tutoring, and dialogue and thereby also help to create an atmosphere that is conducive to positive youth development overall—the type of supportive, exploratory space that Bers (2006) calls an Identity Construction Environment.

Ultimately, the identity members develop links them to the new pathways they see for themselves, which often include aspirations for school, career, and social contributions. As one member wrote,

Coming to the Clubhouse has taught me so much that has helped me in school and in choosing the right college to attend. The Clubhouse has given me the opportunity to explore many college options and to take fieldtrips to the schools to help me narrow my choices. The staff at the Clubhouse has made me realize that I am bright and able to do whatever I set my mind to. My experience at the...Boys and Girls Club has made me want to give back to my community. Though I haven't made a final decision on my field of study, I am certain it will,

in

Clubhouse as Refuge

The Computer Clubhouse is welcoming and inclusive to all youth, but the Clubhouse is particularly important for those for whom the normal difficulties of adolescence are compounded by serious problems in their family or community. For youth confronting broken homes, crime-ridden neighborhoods, or few opportunities in their schools, the Clubhouse serves as a refuge or haven, offering something beyond what it offers most members. One Clubhouse coordinator explained what happened to members during a two-year period when his Clubhouse was closed because of problems with the facility. The coordinator said, "I lost them to the street. [When they were] fourteen, I knew they had a place to go...I could have done something for them in the two years. I lost about 70 kids. And I lost them to the street. I have to be honest, that's just how it is."

Many youth who come to Clubhouses desperately need stable adult guidance and support. Another coordinator explains the situation faced by some members, saying, "Their parents had them when they were kids. [The parents] are still clubbing, gangbanging, doing drugs." For these youth, school life can also be hard. The coordinator adds, "They get early dismissal, kicked out, and they come to the Club. But I can't say anything, because I created that kind of sense of ownership." The Clubhouse gives these kids an alternative to the streets and perhaps serves as their last, best hope.

some day, involve working with children. The opportunities are endless; I could be a teacher, counselor, social worker, youth organization director, and etc. I'm excited to see what doors open for me and pursue a community service type of position.

Broader Connections to the Greater Community

As we have seen, there is considerable collaboration and successful group work at the Clubhouse. One staff member said, "Members work well when it comes to working in pairs and teams. It seems as though they learn from each other very well." Beyond the immediate Clubhouse environment, activities often speak to issues in the greater community. The Clubhouse strives to create partnerships and connections with businesses and organizations around the community:

[Our organization is] connected with all the local public schools and Clubhouse staff have met with teachers, counselors and administrators to follow member progress and encourage students to become Club members. We also attend local community meetings, meet with local police, and hold events for parents around community issues such as drug abuse. Through the Local Advisory Board, the Computer Clubhouse is used as an example of a core part of our consistent, quality programs for the community's youth.

At the same time, efforts are made to incorporate members' interests and concerns in Clubhouse activities. Both these approaches link activities to the grassroots concerns of the community and to the community resources.

Often, members themselves initiate community-building efforts. A theme frequently voiced by older Clubhouse members is giving to younger members. One member wrote,

I have been an active participant of activities at the [Clubhouse] since early childhood. Today I try as much as possible to give back to the younger kids of the community, for all I received when I was their age.

The Clubhouse community also includes the greater global community of Clubhouses. The focus on community building is reinforced in the Clubhouse web site—the Clubhouse Village (Clubhousevillage.org). In discussing the website, a Clubhouse Network leader said the village should be viewed as a Clubhouse would be, with the same rules and expectations of mutual respect. She said, "This is our community and we all need to take care of it." The website, like the Clubhouse, is a place for everyone to showcase their projects and to share their ideas. Use of the website, like other activities at the Clubhouse, is subject to the community's social norms. It is also instrumental for members in learning new ideas, finding a greater audience, and feeling connected to a world with broader horizons and possibilities. One of the coordinators reflected on this:

We are part of an international network. We can give kids access to a worldwide professional training. We give kids access to meet each other, connect them to the entire world. We send them once every two years to the teen summit [where they are] trying to form international connections. We are sitting on a c2c platform—encouraging kids to think about the careers or educational future. We give emphasis to each kid as an individual not as group. We try to educate them to think differently, motivate them to explore their own worlds and to achieve them. There aren't many organizations that do this.

Within this international community, many members are involved in projects that involve Clubhouses other than their own. The projects are varied. One Clubhouse, for example, has been helping plan a collaborative, progressive moviemaking effort based on the Wizard of Oz. Each Clubhouse would act out its own scene and then pass it on to the next Clubhouse. The Teen Summit often becomes an occasion for members to create projects across Clubhouses and to promote their own Clubhouse. Many of these projects are regional. In one region, Clubhouses are collecting songs from different Clubhouses and creating an album. Other regions are working on poetry slams and radio shows, all of which embody the ambition of cultivating and sharing creative material within an international community. Members are also often encouraged to participate in marketing their own Clubhouses. These activities bring awareness of and attention to the nature of their involvement in the Clubhouse, while simultaneously empowering members and giving them an increased sense of pride and ownership.

Coordinators speak about their ongoing efforts to engage youth and actively bring them into a sense of belonging to something bigger than what they might be used to. The Clubhouse Village is an important means for many coordinators to do just this. One coordinator said:

I'm always reaching out. That's what the village is all about. That's how you force the relationships. It trickles down. If I don't know you, if I don't reach out, how do you expect the kids to?... Leadership is opportunity to serve, not for self-importance. I see these kids need something. My goal is to use the Clubhouse to branch it all together. All these models, all these theories and research, there has to be some manifestation in the real world.

Overall, the responsibilities members assume place them in roles of leadership, and, in Clubhouse terms, leadership is about helping others.

When I instill the confidence in the kids who have no hope or are on the verge of giving up, it makes me feel great. It lets me know that I am making a small difference in someone's life. Being a leader is more than being the chief, the boss, or having authority. When you're a leader, you have taken on that role to help others.

Mentoring in Building Clubhouse Community

Mentorships are the social backbone of the Clubhouses, a key part of what gives Clubhouses their distinct qualities as a community. The mentoring relationships that organize the Clubhouse, both in short-term interactions and in the overarching structure of a site, chart the pathway that youth take in progressively developing valued competencies. Both youth and adults occupy key roles in mentoring, formally, informally, and often with a mixture of both. Official adult mentors, volunteers who participate in Clubhouse activities to provide technical support and personal connections for youth, often are key links to the community at large. They share skills, act as role models, show youth new career horizons, and introduce members to people, perspectives, practices, and prospects that they would not otherwise have had.

The mentorship model gives members a structure of learning that differs significantly from formal learning in that it is a more reciprocal relationship where mentor and mentee are both teachers and learners. Kafai, Desai, Peppler et al. (2008) found that co-constructed interactions are most common in these relationships. Sullivan (1996, quoted in Kafai et al., 2008, p. 193) notes that:

...Instead of a helping model of mentoring, which often assumes deficiencies in the adolescent [or student]...a relational model [r]ecognizes the diversity of needs and resources among girls [and boys] of varied backgrounds, assumes that both adolescent [/student] and adult possess vulnerabilities and strengths, and values the contributions of both partners in relationship. (1996, pp. 226-227)

Research has shown that such reciprocity produces positive effects on academic performance, social attitudes, and peer and family relationships (DuBois, Holloway, Valentine, & Cooper, 2002). The mentorship model used by the Clubhouse aligns with a broad body of literature on the role of mentoring in youth development (Flaxman, 1992; Roberts, 2000; Sullivan, 1996; Monaghan & Lunt, 1992; Lucas, 2001; Guetzloe, 1997). One adult mentor said:

I think that the thing I do to contribute to the Clubhouse is spending my time helping out the younger Club members. That's what I really love to do, spend my time working with children. I work at the Club from 3 [o'clock] on, but I spend pretty much all my time here, from when we open to when we close at night.... So overall the biggest contribution I make is my time,

but it's really nothing because I enjoy doing it and I get so much out of it as well. It makes me happy to know I can help others.

Professionals from the community will usually be recruited as mentors only if they are able to commit at least 2 hours a week for a minimum of 6 months. During the Clubhouse coordinator training, new coordinators are encouraged to view mentors as guides, catalysts for ideas, career resources, and role models. Sometimes it is less the particular skills adult mentors have that are important and more their personal interest and investment in the members. One coordinator explained:

Mentors are all professionals. So the best three mentors I have is...a gentleman Mr. James who is a security worker at one of the local schools. So his job basically has nothing to do with technology. But he is interested, and he is there almost every day...one of our mentors is a graphic designer and the other is a video producer. So yeah they have those skills, but...those are the skills that brought them to us, that brought them through the door. But it's more so their interest in kids that keep them with us.

Peer mentorship is also fundamental to the Clubhouse social structure. This role is often spontaneously initiated by members themselves, as an outcome of their own experiences with having received guidance, help, and support from older members or adult mentors. One coordinator wrote about a member who returned from the Teen Summit, saying that

...everything he got and learned from the Teen Summit he shared it with the members and mentors as well as soon as he came back, he taught many members how to use Hyper-score, and trained the mentors on[the Sony software program] ACID.

Another Clubhouse coordinator wrote, "Members here like to teach each other any new program or skill they learn it is like a thrill to them to show other friends what can be done with each program being learned."

Often, members note how their technical skills exceed those of adults in their lives, and that, at times, mentoring others includes mentoring their mentors. A coordinator wrote the following about a member:

One day she came to the Clubhouse very happy, as she taught her computer teacher how to do something in Photoshop she didn't know how to do in front of all the girls, her teacher was amazed! And asked her: where did u learn to do this, and she talked to her about the Clubhouse then her friends wanted to come to.

Many members and former members also documented the ongoing commitment they have to supporting the Clubhouse as alumni:

I returned to the Clubhouse as a volunteer to share what I learned and give back to the Club that helped me so much as I enter in my life as an adult. I worked with the coordinator on the C2C activities and also helped teach the members on Photoshop and design.

My hope is to help others with my education to those that helped during my school years. I would like to be creative to change things to make it easier and better for others.

Kafai et al. (2008) describe the Clubhouse's nonhierarchical mentoring model, one that stresses relationships between the mentor and member. In this model, the mentor and the member work reciprocally "in a mentoring relationship that is more inclusive and less restrictive for the roles of both mentor and mentee" (2008, p. 194).

Networks of supports and multiple strategies are used make the Clubhouse environment rich in the types and number of learning resources available to any member at any time. An important feature of the Clubhouse is the degree to which mentors and alumni model what they want members to learn. In coaching some members, they exemplify a behavior for members to follow and thus they begin a cycle through which peers coach one another. By pointing to their own successes, experienced members implicate the successes that others will soon be able to achieve by following in their footsteps. Mentors are therefore instrumental in creating the social continuity that enhances the sense of community within the Clubhouse environment.

Coordinators noted:

Members are constantly mentoring other members, is part of our philosophy. And yes, the senior members most certainly give something back. Some as members, some as theme night holders, some as advocates for recruiting new members.

In relation to mentoring, I see members helping out one another on a daily basis. If someone is having trouble getting a program to run or just needs help spelling, they are willing to help each other out.

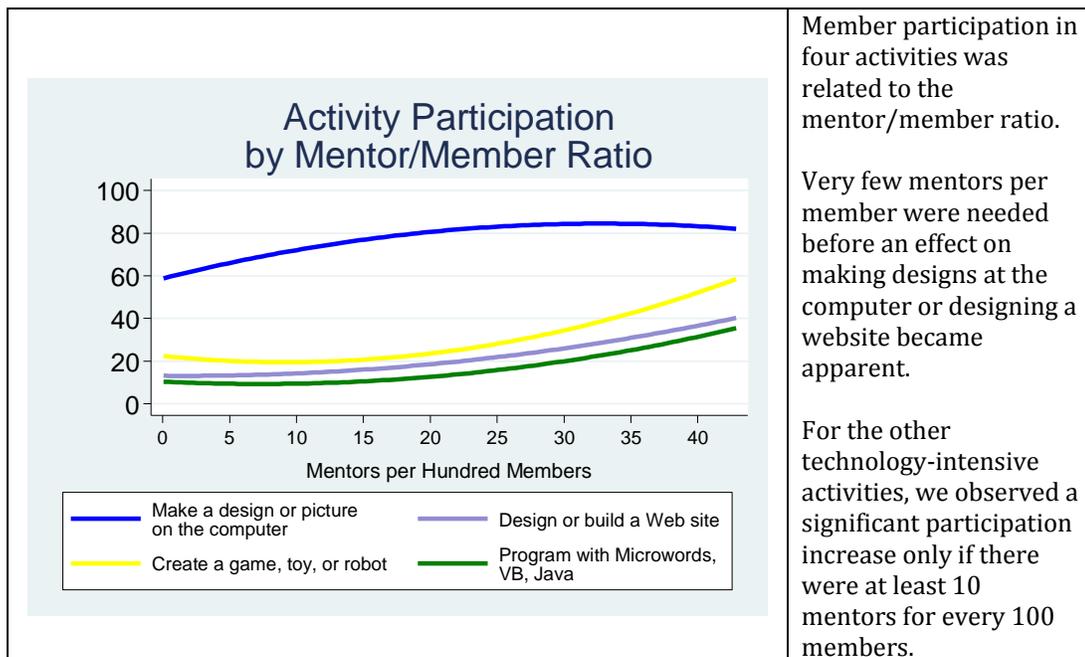
Clubhouse coordinators frequently report that deep bonds are made between members in the Clubhouse. One reported: "The social bondings in the Clubhouse is remarkable. Members become friends in no time and they support each other no matter what." As members go through the program and reflect on skills and perspectives acquired, they are aware of their relationships with their peers as well as adult mentors and how they have helped and facilitated their experiences in the Clubhouse. As they become mentors themselves, they appear to frame their reflections on their own learning experiences with the mentor and other peer relationships and often express sentiments of reciprocity, wanting to *give back* for what they have received. One coordinator stated that "when members work their way up to being 'peer mentors' they feel a sense of accomplishment." The social connections and the mutual feelings of reciprocity carry over into motivations for contributing to other peers, the Clubhouse, and the community at large with the skills and knowledge they have acquired. One coordinator wrote:

The Clubhouse is a place for adults, teens and youth to mentor and lead by example. One of the responsibilities of successful mentors is to create other mentors. Many of the youth start as junior mentors and tour guides for new members. Several youth who have become teens in the past year have taken on the role of being a teen mentor and assisting in running workshops. With the adult mentors spending training time with the teen and junior mentors, they mentor each other into becoming better mentors. The goal with every leadership role is to have youth and mentors seek to change from feeling that they are just a participant. Participants who utilize the Clubhouse become mentors for other members and leaders. The eventual goal is for those mentors to become leaders, who contribute back to the Clubhouse and can run workshops and have developed skills for their futures.

Beyond mentorship in technical and other youth-oriented activities, at all Clubhouses members are encouraged to participate in administration and management. For example, members are asked to contribute ideas to the adults in charge of the programming. In one Clubhouse, members “were encouraged to discuss matters with minimal interference from the Clubhouse Coordinator.” At another Clubhouse, the youth council is a considered “a valued sparring partner for the coordinator and staff.” These experiences can deepen relationships for all participants.

Our survey research supports the finding that the multiple and varied social resources available within the Clubhouse setting affect levels of participation and learning. In analyzing the relationship between the number of mentors at a Clubhouse and the types of activities undertaken, we found that the number of mentors varied directly with the degree of participation; that is, the more the mentors, generally speaking, the greater the engagement in technical work (Figure 20). The threshold at which significantly more members started participating in an activity varied by activity. For some of the more challenging activities, it seems, more human resources were needed to create the momentum for engagement.

Figure 20. Percentage of Members Engaged in Various Activities, By Mentor/Member Ratio



In site visits to various Clubhouses, it was easy for us to personally observe older members spontaneously reaching out to help younger peers. In some cases, older members assumed the role of experts, voluntarily walking around the Clubhouse assisting with technological challenges. Members were eager to present and share the projects they worked on using Clubhouse technologies. The varying levels of skill and knowledge of members, mentors, and coordinators at Clubhouses mean that participants make use of each other as resources, with the

result that relationships strengthen and emerge around technological problem solving or the sharing of project activities.

Coordinators: Making it All Work

The Computer Clubhouse implements its learning visions in a variety of ways—in the design of the environment, the use of particular technologies, the mentorship and partnership structures, and the incorporation of career objectives into programs. But the core of the Clubhouse implementation is the coordinator, whose knowledge and personal investment in the Clubhouse activities form a crucial link between the Clubhouse philosophy and its practices. “Coordinator is kind of a misnomer for what you do,” said one Clubhouse coordinator when discussing her work. She explained that the development of close relationships with members helped them build a sense of trust that makes it possible for them to see themselves in ways that are more motivating, empowering, and constructive. “We become almost like guidance counselors or social workers, or friends,” said one coordinator, continuing, “It’s powerful to see them growing, knowing that you’re having an impact on how they’re developing. You’re not responsible for their upbringing, but knowing about what’s affecting them that you might be able to help with.”

Creating the kind of relationships and social environment that foster the growth of underserved youth requires intricate interpersonal negotiations, as illustrated by the following quote:

We had another young kid a few weeks back. He skipped school. But he showed up at the studio. [One time] they went outside, where he had a little crew. They came back, and they were high. He said, ‘can I get some time in the studio?’ I asked him: ‘Did you just go outside to get high? ... He wanted to lie. But he said yes. I said we would discuss it. He could have lied. This was a pivotal moment. So he came back in. We decided to let him go to the studio that day. A lot came out of it. He told me about how his grandmother died.

Coordinators play a pivotal role in implementing the Clubhouse’s four learning principles. *Design, innovation, and creativity* require someone to create opportunities, to encourage members to believe that they are innovators, and to provide them with constructive feedback and helpful ideas for completing their projects. To develop *projects based on members’ interests* takes keen observation of what members are going through in their personal lives, as well as the members’ trust to express what they care about and are interested in. Although *the cultivation of community* extends beyond the Clubhouse walls to include the society around it and the world at large, the community begins with the social relationships among members, mentors, and coordinators, and here again the coordinator’s personal engagement plays a defining role. “I’m always reaching out,” said one coordinator. “That’s how you force the relationships. It trickles down. If I don’t know you, if I don’t reach out, how do I expect the kids to?” Finally, *access to resources* means more than the physical availability of computers and software. For members who may not identify themselves as consumers and users of sophisticated technology, the Clubhouse coordinator performs an ongoing social intervention to mentor members in the skills needed and to cultivate in them the sense that technology can be a tool for their own expression and growth.

Conclusion

This report is window on “the thousand wonderful experiences,” in the words of one member, that combine to make the Clubhouse affect youth as it does. Each of these experiences is the product of the complex interplay of features and processes that characterize the Clubhouse. A challenge in writing about the Clubhouse is the artificiality of pulling apart the strands that make the Clubhouse environment successful and distinctive. Technology skills are wrapped up with identity, identity is of a piece with mentorship, and mentorship is a central mechanism for the development of technology skills. Despite this challenge, we have tried to bring to the fore the factors that most significantly shape the Clubhouse experience for members. By doing so, we can better show the relationship between the outcomes we document and members’ experiences in the Clubhouse.

When considered in light of the vast and diverse ecology of which each member is a part—home, family, friendships, school, neighborhoods, virtual worlds, places of worship—what may be most remarkable about the Clubhouse is that it provides youth a forgiving practice space in which to work through the issues, challenges, concerns, and opportunities presented everywhere else. The Clubhouse environment is structured in such a way that it not only is inclusive of all types of people, but is also inclusive of all types of experience. Members do not need to check their burgeoning artistry, their hopes for greater respect, or their sensibilities and inclinations of any sort at the door. Instead, the whole person is accepted and the whole person is expected to strive to make the most of his or her circumstances.

The process through which members build on what they come in with, whether strengths or liabilities from the other parts of their lives, is one that brings out their best. Human, technological, representational, emotional, and intellectual resources abound. Moreover, youth are given full license to develop additional supports that might help them. Combined, these supports leverage any incremental change for the better to help each member become his or her best. The assumptions that circulate in Clubhouses, shaping practice and discourse, are that there do not have to be losers when there are winners and that each member can demonstrate success on his or her own terms. Yet, the Clubhouse supports certain types of outcomes unequivocally. Arguably, the type of success that is most valued is one of character: the inclination to be of service to fellow members, to the Clubhouse, and to the community at large. The knowledge, skills, capabilities, tools, and connections members develop at the Clubhouse are ideally for purposes of serving the various communities, including the Clubhouse, of which they are a part.

But, however much they give, members are also in the process of building capabilities they can take to other places in their lives. They typically struggle along the way, but trying again is always an option at the Clubhouse and members know they always have the chance, if needed, to redeem themselves. In the end, the Clubhouse affects members differently, but it probably affects them all by giving them the opportunity to integrate different strands of who they are and want to be into a more coherent, capable, and even likable whole than when they first arrived.

The Clubhouse Network has a great many stories of dramatic life changes brought about by participation. It also has survey results, attendance data, and other quantitative forms of

evidence of its own impact. What has been hard for it to obtain—and the same is true for all rich learning environments—are robust accounts of *how* the Clubhouse does for youth what it does: What are the Clubhouses' established features and processes, its characteristic ways of interacting, and its standards for being a decent, responsible, and productive person? How can Clubhouses systematically document and causally link what they do to the youth outcomes that they promote?

Matters of these sorts are as much of concern to experts in measurement and rigorous research as they are to those committed to the Clubhouse model and to proving it works.¹² The shared understanding that good things are happening to youth in places like the Clubhouse are often distilled into compendia of best practices—e.g., caring relationships, the opportunity to gain concrete skills—but they are less frequently elaborated in sufficient clarity and detail to allow for an analysis of actual processes, experiences, and mechanisms for promoting growth.

The challenge remains for the research community to create solid documentation of how social, emotional, intellectual, and other forms of development are fostered in successful learning environments. Many researchers recognize the inherent value in studying places like the Clubhouse for purposes of understanding how program design is put into practice and how this practice leads to outcomes. The ultimate goal for most is to gain insights into how effective educational institutions work. We are quite sure that the coordinators and Clubhouse Network leaders we have talked with over the years would all be thrilled to think that study of the Clubhouse, beyond generating findings about the Clubhouse itself, could be of use to those attempting to reenvision other educational institutions and make growing up more joyful and positive for as many young people as possible.

¹² Two logical next steps grow naturally out of research and evaluation work conducted to date within the Clubhouse Network. The first would be continuing survey work with an emphasis on tracking specific members from one year to the next. The second would be conducting a multi-site, longitudinal qualitative study that would follow a sample of new members over several years. Such a study could take advantage of the research foundations developed in prior studies and provide the best chance to link outcomes with specific features of the Clubhouse model.

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