

# The Multiple Roles of Mentors

*Yasmin Kafai, Shiv Desai,  
Kylie Peppler, Grace Chiu, and Jesse Moya*

Mentors play an important role in the success of every Computer Clubhouse—as in many other community organizations—and this is for multiple reasons: Mentors are there to support Clubhouse members in their projects in various ways providing technical advice, ideas, and feedback in addition to motivational support. Equally important is the tie-in to the larger community, both in local connections and professional opportunities that mentors can provide to Clubhouse members. This is why, as part of any initial charter, new Clubhouse sites are encouraged and even required to recruit and sustain ongoing mentoring partnerships with members of the local community.

While scholars and practitioners alike do not agree on one definition of *mentoring*, many base their efforts on a widely held view that mentoring involves acting as a guide, advisor, and counselor to a mentee (DuBois & Karcher, 2005; Jacoby, 1991; Monaghan & Lunt, 1992; Roberts, 2000). In recent years, this view of mentoring has come under critical review (Hart, 2006; Howard, 2006; Sullivan, 1996). In our work (Kafai, Desai, Peppler, Chiu, & Moya, 2008), we found that the Clubhouse learning model inspired a fuller range of mentoring interactions, well beyond prior top-down approaches to include more equitable, coconstructionist and learner roles for mentors. Indeed, many of the Clubhouse mentors concur that this is how the majority of their time is spent.

As we have already seen in our discussions from those in the field in Chapter 3, this is a complicated issue and filled with many unique challenges depending on the geographic location of each Clubhouse. For example, the Flagship Clubhouse's home in the Museum of Science, its connection and proximity to MIT, and its location in the Boston area, one of the nation's leading digital technology incubators, has provided the Flagship with many interested volunteers who are rich in technology expertise and also enjoy working with youth. To many, these particular circumstances may appear as serious limitations for the outreach and success of Clubhouses located in rural or other areas without access to such extraordinary human resources. In fact, while technology experience is important for mentoring in the Computer Clubhouse, it is not a necessary requirement, as our observations of mentoring in this chapter illustrate.

In the case of the Youth Opportunities Unlimited Inc. Computer Clubhouse, rather than bringing in tech-savvy engineers and programmers, undergraduate liberal arts majors with little to no extensive knowledge of computers were brought in to take on the role of Clubhouse mentors for several months. Their participation illustrates that mentoring in the Clubhouse can mean much more than just teaching and facilitating, the roles traditionally associated with mentoring. Being a mentor can also mean assuming the role of a learner, especially when working with tech-savvy Clubhouse youth. This is an important contribution to the field of research on mentoring but also speaks to those in areas without expert resources. In this chapter, we provide rich descriptions of the mentoring interactions that took place in the Youth Opportunities Unlimited Inc. Computer Clubhouse and share what mentors had to say about their mentoring experiences. Our goal is to contribute to the ongoing discussion of mentoring, which has enjoyed a veritable renaissance in corporations, universities, youth organizations, and religious and civic groups in the last decade because it is seen as addressing both career-oriented and psychosocial issues faced by disadvantaged youth from underresourced areas.

## MENTORING ROLES

Before we started our observations in 2003, there were no regular mentors at the Youth Opportunities Unlimited Inc. Computer Clubhouse in South Los Angeles, with the exception of one long-term volunteer and, occasionally, graduate students from UCLA, despite the Clubhouse's repeated attempts to draw new mentors to the space. Inspired by the Fifth Dimension, which brings undergraduates into after-school programs (Cole, 2006), we decided to offer an undergraduate course in UCLA's education minor program with a community service component. As part of the course's field internship, 36 undergraduates became mentors in the Clubhouse, where they supported youth in planning, developing, and completing projects. All the participating mentors were enrolled in our seminar and field internship component. Most of them were women, with the exception of nine men, and they came from diverse ethnic backgrounds. Students were either in their third or fourth year of undergraduate study. The mentors were never formally assigned to one particular member; rather, mentors were invited to spend time in the informal environment of the Clubhouse and to feel free to take initiative with any members, as well as to make themselves available to members as needed.

All undergraduates wrote about their mentoring interactions in field notes, which over the course of 2 years created an impressive archive documenting Clubhouse activities. For this study, we collected a total of 213 field notes from the participating undergraduate mentors. We also interviewed the mentors in groups about their experiences at the end of each course. In these interviews, we used the following questions to start conversations between mentors: How did you see your role as a mentor at the beginning of the quarter? How do you see your role as a mentor now? What surprised you most in your mentoring experience? What was the hardest part about mentoring? What was the easiest? Each interview lasted about 15–20 minutes. All of the interviews were transcribed in preparation for later analyses.

## THE TYPES OF MENTORING ROLES

In reviewing the field notes, we found that mentors described various interactions with members ranging from teaching to learning during the course of their field internship. This process generated various mentoring activities that we condensed in iterative rounds to five roles: teaching, facilitating, coconstructing, observing, and learning. Our goal was not to account for all recorded mentoring interactions in the field notes but to focus on those that described *sustained mentoring*. We defined sustained mentoring as any activity where a mentor was interacting with a mentee over an extended period of time (a minimum of 15–20 minutes). In the field notes either the length of the passage or the description of the amount of time that took place during the activity indicated this. We then coded all sustained mentoring interactions in field notes according to their focus: teaching, facilitating, coconstructing, observing, and learning. (For more detail, see Kafai et al., 2008). We viewed teaching at one end of the spectrum, where the mentor is directing activities, and learning at the other end of the spectrum, where youth are directing activities. In between these two extremes lie three other types of mentoring interactions: facilitating, co-constructing, and observing. This full spectrum of mentor and mentee interaction is important for developing both the leadership and knowledge base of the Clubhouse youth, or any youth for that matter.

By way of illustration, we will first describe these different mentoring roles in greater detail and provide specific examples from the undergraduate field notes. For instance, mentoring interactions that described “teaching” often listed events where the mentor dictated or controlled the majority of the content and structure of the interaction and there was evidence of intent to teach:

I really enjoyed teaching them how to type because they were both so exited and enthusiastic about learning the correct way to type. . . . Their typing forms greatly improved, but much work still needs to be done.

I showed him how to upload a picture of him, and then I walked him through the editing process.

I told her to place the white arrow on the picture that she wanted to download and press the right button on the mouse and click on “Save Picture As.” . . . I told her to do this for each individual picture. She had problems doing this so I had to ask her if I can use the mouse so I can show her what buttons she needed to press.

These examples showcased what is traditionally associated with mentoring—a mentor helps expand the knowledge of a Clubhouse member.

In a “facilitating” role, the mentor led the activity by providing just enough support and guidance to allow the youth to successfully explore and discover an activity at their own pace. In these situations, the mentor is still directing the learning but in a much less direct fashion. In our view, while this is similar to the type of direct instruction found in the teaching role, it differs because it allows youth to explore the problem at their own pace and provides instruction only when needed:

I sat next to John as he used trial and error to figure the solutions to the problems. Every now and then I would give him my input.

He chose what games he played and I just guided him through the questions and asked him things to find the solution.

I wanted to continue to give Paulina ownership over the project, so I tried to serve as an initiator of different experiments with the program, but intentionally conceded all decision making and design choice[s] to her.

In these excerpts, the Clubhouse youth actively participated in the activity, providing input or even driving the content of the activity, but the top-down approach was much less rigid than that of a teaching role.

In "coconstructing" roles, the interaction was characterized by reciprocity between the mentor and Clubhouse youth, where neither dominated the content or character of the interaction. These activities were coconstructed, with both youth and mentor contributing and learning through the course of their interaction. There was noticeable give-and-take, resulting in a relationship within a dyad of fairly equal standing within the activity:

We switched off controlling the mouse and tried to help each other by making suggestions. Jon would say things like, "Oh! I think I know what we need to do." I would also say similar things when he was controlling the mouse, like, "Ah, maybe you have to . . ."

Rosie and I experimented with the glide function. We knew where we wanted the dolphin to start and end, but we did not know the coordinates of the two places . . . Rosie and I finally made the dolphin move the way we wanted it to.

In these excerpts, we start to see the strong role that design projects play in enabling coconstructionist learning.

When mentors take on the role of "observing," the Clubhouse youth led the content and character of the interaction but the mentor did not report that they were learning from the activity in their field notes, nor were the mentors seen as a source of information or guidance by the youth:

I sat back while Marisol did all the work. She didn't ask for my input and I did not give it. Instead she would do something to the face and then look at me. Wait for a reaction and then move on.

He showed me how many clams he had and was showing me the new levels he had completed (he seemed to like showing me all his accomplishments because he just showed me without me asking).

In these excerpts, we start to see that mentors can still facilitate members' involvement in Clubhouse activities by just being a supportive friend, sitting next to youth

and being willing to devote time to watching their activities.

Finally, “learning” roles were interactions where the youth led the interaction with an intention to teach, and there was evidence that the mentor was learning from the interaction:

When it failed, Alex . . . came over and showed me how to build the coaster the right way . . . . Through his help I was able to understand how you have to go about making the rollercoaster and why it only allows you to use certain pieces at certain times.

I said, “Okay, but only if you help me because I’ve never done this before.” (Isaac was a good teacher.) He taught me step-by-step.

When I asked him how they were able to make movies, he said, “OK, look, I’m going to show you.” He opened a new file and began to show me step- by-step how to make a movie.

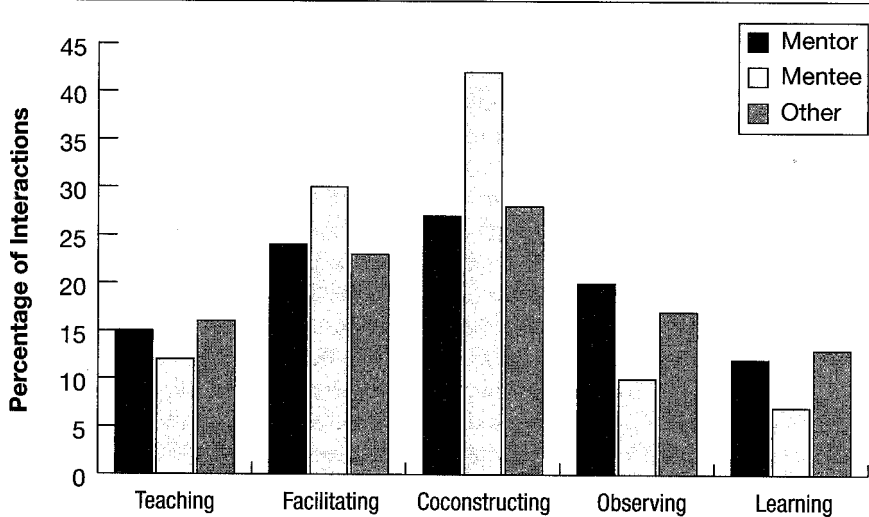
When we examined all of the coded passages, we found that the most frequent type of mentoring roles were coconstructive interactions, followed by facilitating, observing, teaching, and learning (see Figure 8.1). What is most interesting about this distribution is the prevalence of mentoring interactions that place the mentor in the role of learner, observer, or coconstructor—all roles which imply a more reciprocal and equitable relationship between mentor and Clubhouse youth. These kinds of roles have been underreported in prior research on mentoring and tutoring. Teaching and facilitating are still part of the mentoring experience in the Computer Clubhouse, but they don’t dominate the interactions as they would in a conventional setting.

When we further examined the distribution of roles in each student’s mentoring, no undergraduates reported filling only one role, which indicated that these roles were fluid and not dependent on the types of prior experiences of the mentors. Most mentors described multiple roles of mentoring during a single visit, as the following excerpts from one mentor’s field notes illustrate:

Throughout the animation portion, Stacey and I found that he [Arnold, a Clubhouse member] was narrating the whole project . . . . Stacey and I decided that we should include a sound clip of Arnold narrating the action. . . . [The Coordinator] was able to find a microphone for Arnold to use. It was difficult to have him narrate the passage effectively since he was somewhat nervous, but after a couple of tries he was able to recall his original narrative voice. Rather than constantly give him feedback, Stacey and I let him figure out what narrative voice to use since our interference might hinder his work . . . [Coded as: Observer Role]

After forming the basic animations and narration, we still had to figure out how to animate the soldier’s beheading. Amanda became our best source as she came over and offered to help. She showed us some of her project so then we could understand how she switched head graphics.

**FIGURE 8.1.** Initiation of mentoring interactions by role



We learned from looking at Amanda’s animation grid that in order to switch graphics, we had to apply a switch costumes function at the end of the previous animations for that costume . . . [Coded as: Learner Role]

Nearly one half of all mentoring interactions were initiated by mentors, compared to one third by the youth; coordinators and other mentors initiated one fifth of the interactions. This finding seems to confirm the central role that mentors play in the life of the Clubhouse in engaging and sustaining youth in activities. But these numbers also point out that Clubhouse youth sought out these contacts, and thus indicated an active stance toward requesting assistance. When we further examined the types of mentoring roles (i.e., teaching, facilitating, coconstructing, observing, or learning) that occurred in either mentor- or mentee-initiated interactions, we found that coconstructionist mentoring relationships resulted in 40% of the youth-initiated interactions (see Figure 8.1). It appears that Clubhouse members were interested in having collaborators when working on projects and those who could provide assistance (facilitator roles) or explain something when needed (teacher roles).

When we examined the context of mentoring, design activities took the lead, followed by games, socializing, and then Web surfing and homework. It should come as no surprise that design activities were most popular with coconstructive mentoring. Design activities involved the use of programming; 3-D animation; graphics software such as Scratch, Kai’s SuperGoo, Bryce5, Photoshop, KidPix; game design programs such as RPG Maker; and music production software. Game activities included games on the computer, such as Roller Coaster (Tycoon), School Tycoon, video and online games, such as Whyville.net, as well as board and card games, foosball, and air hockey. Web activities involved Web surfing with youth, while homework involved mentors helping youth with anything school-related. We also created a “Personal” category to include all social activities and interac-

tions between the mentor and youth that establish and build upon the interpersonal relationship outside of the context of other activities. In design activities, youth often invited mentors to join them in an effort to create a program, graphic design, or song and solicit their opinions about what to do in the project. The following example illustrates how design activities can provide a context for a more equitable relationship between mentor and youth:

After we made the character's body move, I asked Jacob if he wanted to change any parts of the character. "Yes, and I want the background to be a jungle." . . . We asked [another mentor] what to do after this. She showed us how to save the picture on the server and in the Scratch folder. She labeled it "nature Jacob". We went back to the Scratch program and chose the background sprite. We then went to "load" and found "nature Jacob" and opened it. When it appeared, Jacob clapped. (We were both happy about what we were accomplishing. I had never really worked with Scratch outside of the classroom at UCLA, and the collaborative process was very exciting.) . . . We decided that we wanted the sleigh to fly. We used the glide control and the sleigh and reindeer glided, but then intersected at the top. We kept trying to figure out how to not make it do that. [The other mentor] came by and suggested that we change our x and y positions. She also helped us add sound to the reindeer that simulated bells ringing . . . [Coded as: Coconstructor Role].

Having these types of design activities while mentoring allowed youth to have a very different relationship to adults than they might otherwise experience with homework help, games, or other types of mentoring activities.

## REFLECTIONS ON MENTORING ROLES

The exit interviews provided a good opportunity to hear what mentors had to say about their preconceived ideas of going into the community as well as their reflections and experiences about mentoring in the Clubhouse. In nearly half of the interviews, mentors brought up social issues associated with the community they visited—misconceptions they had held initially about the Clubhouse members and their lack of access to resources. One of the mentors articulated this very clearly in the following passage:

*Mentor:* [There are] a lot of preconceived notions people have going into the Clubhouse . . . I'm not going to sit here and lie and say that I didn't already have these fed assumptions of these kids. I did take into account that I'm going to work in Inglewood and South Los Angeles. I'm thinking . . . not because they are not intellectually capable of it. It's just the things they have been exposed to [up to] this day I am assuming is limited. I was completely wrong. The first person I met was Fabian. Fabian wasn't aware of some of these things (group laughs). That idea was completely deconstructed.

*Interviewer:* It kind of changed your notions of the area?

*Mentor:* Yeah. The area and the kids themselves . . . There is some change going [on] . . . small but there is some change. Something positive is going on.

Others brought up related issues about deficit notions of mentoring and what it means to need a mentor, which were also deconstructed after these experiences:

I didn't know [anything] compared to what they knew. Usually...mentorship . . . is often associated . . . in a way with deficit thinking because they need a mentor: "They don't have this, so we are going to go in there and be a mentor." That's how it was associated in my brain. Once I was there, it was completely not like that. So that was the biggest surprise.

Three fourths of the mentors also described their multiple mentoring roles and addressed changes in their roles. Despite the benefits of being a coconstructor or learning from the members, this can be an initially uncomfortable position for the mentors who had expectations of themselves as being a tutor or Big Brother/Big Sister to the youth.

I think [my conception of mentoring] changed from being thought of as being a tutor/teacher and turned into something more like a supporter/companion. . . . [T]he most important thing I learned in this class was that you don't need to pick between roles, not only playing with them at the green table but . . . you could be at the computers and learning Scratch together so . . . it was like them teaching me something and me teaching them something and us working together.

I was actually surprised because I really didn't think I was going to actually learn from the kids. When I went in, I thought, "Oh, they are going to have to come with me and ask me for help." But after the roles begin to change I was like, "OK". . . . I was really surprised.

These types of roles emerged largely due to the fact that the undergraduates had very little experience with technology outside of e-mail and cell phones. Not surprisingly, in nearly all the interviews, mentors reflected on their own learning and understanding about technology and often explicitly addressed their changed understanding of software design or programming. Their answers might seem surprising given the seemingly plentiful amount of technology exposure the undergraduates have in their daily life, but few of those experiences involve the types of design technologies found in the Clubhouse. This demonstrates the powerful effect that the Clubhouse has, not only on its members but on its mentors as well.

Our findings clearly demonstrate that mentoring in the Clubhouse comprises different interactions, ranging from teaching to learning, which is an unusual experience for volunteers working with youth in the after-school hours. One surprising finding in the field notes was the strong presence of coconstructive interactions that put mentors and Clubhouse youth on more equal footing. It is possible that



the constructionist nature (Kafai, 2006) of the Clubhouse played a role in this finding, which placed an emphasis on design activities over games and Web surfing. We know that nearly one quarter of all reported mentoring interactions focused on design activities and these might be more conducive to a collaborative effort.

## **MENTORING PARTNERSHIPS**

We want to take our expanded notion of mentoring a step further and suggest thinking about Clubhouse mentoring as a form of partnership. Such a mentoring partnership is built on the assumption that college youth, who often have unprecedented access to technology use in their daily lives and schooling, might be well positioned to work on technology projects with urban youth from underserved communities often described as the primary victims of the Digital Divide (Warschauer, 2004). Yet when faced with design technologies, most undergraduates, especially those from the liberal arts, have little experience beyond Web browsing and game playing and thus find themselves in situations where they become learners of new creative technologies (Goode, 2004). For these reasons, mentoring partnerships offer the possibility of a more equitable and reciprocal relationship that opposes the deficit perspective prevalent in many mentoring efforts (Villalpando & Solorzano, 2005). This perspective assumes that mentors are the providers of advice and holders of knowledge found lacking in mentees.

In a review of the literature, prior discussions of the learning benefits of mentoring have addressed aspects such as civic participation, improved self-esteem, and increased opportunities to interact with peers different from themselves, but these benefits were seen as outcomes and not as features of the mentoring process itself. Learning roles were overwhelmingly associated with design activities at the Computer Clubhouse. This finding may be of interest to other programs wanting to stimulate a full range of mentoring roles in informal settings.

One of the reasons why we think this approach might work well in Clubhouse settings is because mentors are modeling how to learn for the members. They are modeling what questions to ask when you don't know something, what resources to draw upon when you want to solve a problem, and how to effectively listen to someone else. This also provides the mentors an opportunity to showcase and articulate their understanding, deepening the learning experience for the members. In effect, this approach is all about modeling how to learn about learning—a much more complicated approach to teach than the ins and outs of various technical skill sets. This is due in part because technology itself is ever changing, which provides a perfect context for this type of mentoring model. The design projects also enabled mentors with multiple types of backgrounds to enter into these experiences, something that wouldn't be possible with narrowly technical activities lacking the media-rich aspects of the tools and software available at the Clubhouse.

The implications from studying mentoring at the Computer Clubhouse present several promising directions for mentoring and community service learning in general (Vogelsang & Astin, 2000). To conceptualize mentoring as learning opportunities for academic skills challenges core assumptions of who can be a men-

tor and for whom. For fields such as computer science, there is an assumption that technical skills are a necessary qualification for becoming a mentor. Our findings suggest that it is a possible, but not a necessary, prerequisite. The idea of having mentors learn along with youth offers a promising venue to rethink what we mean by mentoring. Such a mentoring partnerships model would also be possible to replicate with other types of community partners and need not be a university partner, which would be more amenable to sites seeking mentoring support in areas without universities in the close vicinity.





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# THE COMPUTER CLUBHOUSE

CONSTRUCTIONISM AND CREATIVITY IN YOUTH COMMUNITIES

Forewords by BARTON J. HIRSCH AND ROSALIND HUDNELL



# Contents

Foreword <i>by Barton J. Hirsch</i>	ix
The Computer Clubhouse: The Intel Perspective <i>by Rosalind Hudnell</i>	xi
Acknowledgments	xiii
Introduction: The Computer Clubhouse: A Place for Youth <i>Yasmin Kafai, Kylie Peppler, and Robbin Chapman</i>	1
<b>PART I: THE COMPUTER CLUBHOUSE MODEL</b>	
1. Origins and Guiding Principles of the Computer Clubhouse <i>Natalie Rusk, Mitchel Resnick, and Stina Cooke</i>	17
2. Going Global: Clubhouse Ideas Travel Around the World <i>Patricia Díaz</i>	26
3. Perspectives from the Field: It Takes a Village to Raise a Clubhouse <i>Kylie Peppler, Robbin Chapman, and Yasmin Kafai</i>	35 ✓
<b>PART II: CREATIVE CONSTRUCTIONS</b>	
4. Making Games, Art, and Animations with Scratch <i>Kylie Peppler and Yasmin Kafai</i>	47 ✓
5. Interface Design with Hook-Ups <i>Amon Millner</i>	58
6. Youth Video Productions of Dance Performances <i>Kylie Peppler and Yasmin Kafai</i>	71 ✓

### **PART III: COLLABORATIONS IN THE CLUBHOUSE COMMUNITY**

- |      |  |     |
|------|--|-----|
| 7.   | <b>Encouraging Peer Sharing:<br/>Learning Reflections in a Community of Designers</b><br><i>Robbin Chapman</i>                             | 81  |
| ✓ 8. | <b>The Multiple Roles of Mentors</b><br><i>Yasmin Kafai, Shiv Desai, Kylie Peppler, Grace Chiu, and Jesse Moya</i>                         | 90  |
| 9.   | <b>The Computer Clubhouse Village: Sharing Ideas and Connecting<br/>Communities of Designers Across Borders</b><br><i>Elisabeth Sylvan</i> | 100 |

### **PART IV: SHOWCASES OF COMPUTER CLUBHOUSE SUCCESSES**

- |   |   |     |
|---|---|-----|
| 10.   | <b>Participation, Engagement, and Youth Impact<br/>in the Clubhouse Network</b><br><i>Gail Breslow</i>                                      | 111 |
| 11.   | <b>Hear Our Voices: Girls Developing Technology Fluency</b><br><i>Brenda Abanavas and Robbin Chapman</i>                                    | 125 |
| ✓ 12.   | <b>From Photoshop to Programming</b><br><i>Yasmin Kafai, Kylie Peppler, Grace Chiu, John Maloney,<br/>Natalie Rusk, and Mitchel Resnick</i> | 136 |
| <b>Epilogue: A Place for the Future</b><br><i>Yasmin Kafai, Kylie Peppler, and Robbin Chapman</i> |   | 145 |
| <b>References</b>   |   | 151 |
| <b>About the Contributors</b>   |   | 156 |
| <b>Index</b>  |   | 159 |



This book is about the Computer Clubhouse—the idea and the place—that inspires youth to think about themselves as competent, creative, and critical learners. So much of the social life of young people has moved online and participation in the digital public has become an essential part of youth identities. The Computer Clubhouse makes an important contribution not just in local urban communities but also as a model for after-school learning environments globally. This model has been uniquely successful scaling up, with over 100 clubhouses thriving worldwide. Showcasing research by scholars and evaluators that have documented and analyzed the international Computer Clubhouse Network, this volume considers the implications of their findings in the context of what it means to prepare youth to meet the goals of the 21st century.

#### Book Features:

- A successful, scalable model for providing at-risk youth a rich array of media design and computing experiences.
- Diverse examples of media created in the Clubhouse, ranging from digital stories, video games, interface designs, and digital art projects.
- Color photos of life in the Clubhouse, including youth projects.
- Interviews with stakeholders in the Clubhouse Network, from the director to coordinators at various international clubhouses.

"It is difficult to conceive of an after-school setting that would have a greater emphasis on positive youth development.... Beyond learning computer programming, young people at the Clubhouses learn marketable skills in product design, project management, teamwork, marketing, and communication.... Read [these chapters], appreciate what has already been accomplished, and consider the exciting possibilities for the future."

—From the Foreword by **Barton J. Hirsch**,  
Northwestern University, author of *A Place to  
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"As you will read in this book, the impact of the Computer Clubhouse on underserved youth around the world has been far-reaching, long-lasting, and life-changing."

—From the Foreword by  
**Rosalind Hudnell**, Intel Corporation

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—**Michael Cole**, author of *The Fifth Dimension:  
An After-School Program Built on Diversity*

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