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What is This?
“Mommy Wants to Learn the Computer”: How Middle-Aged and Elderly Women in Taiwan Learn ICT Through Social Support

Cecilia I. C. Lin¹, Wen-hui Tang², and Feng-Yang Kuo²

Abstract

The group of middle-aged and elderly women represents the lowest usage rate of information and communication technology (ICT) in Taiwan. This article reports how a social intervention program, the Taiwan Women Up (TWU) program, has helped such group to successfully learn ICT skills with the support of members of nonprofit organizations. The study adopted qualitative research methods and accomplished in-depth interviews with 28 TWU participants to reveal the ICT learning experiences of women learners. The findings show that TWU program enabled middle-aged and elderly women to achieve the goals of supporting their organizations and empowering themselves as more capable ICT users. Learning and sharing ICT experiences with fellow members helped them overcome their frustration; whereas empathetic understanding and support among members provided the main source of encouragement in the learning process. This study showed that NPOs played a critical role in identifying potential learners and sustaining the ICT project successfully.

Keywords

social support, gender, middle-aged and elderly women, social intervention, nonprofit organization (NPO), ICT learning

Middle-aged and elderly women have been targeted as one of the underrepresented groups in terms of information and communication technology (ICT) usage as the disparity in ICT usage between genders increases with age (Carpenter & Buday, 2007;

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Liff & Shepherd, 2004). Although significant resources have been invested over the past decade to increase accessibility to computers and the Internet (Dewan & Riggins, 2005), reports from many countries reveal that the ICT involvement of elderly groups, especially elderly women, remains low (National Telecommunications Information Administration, 2004; Organization for Economic Co-operation and Development, 2001; Taiwan Research Development and Evaluation Commission, 2006). For example, Britain is still significantly divided both by gender—64% of men and 55% of women said that they use the Internet—and by age—only 18% of retired women reported being users (Liff & Shepherd, 2004). In the European Union, only 19% of women older than 55 years are Internet users (Eurostat, 2006). A similar situation exists in Japan and South Korea, with less than 15% of those older than 60 years being ICT users, and with men users exceeding women users by about 10% (Ministry of Information and Communication & National Internet Development Agency of Korea, 2005; Ministry of Public Management, Home Affairs, Posts and Telecommunications, Japan, 2004). In Taiwan, national surveys show that the digital divide between genders is first seen in the middle-aged group, and among women aged 61 years and older, ICT usage rates drop to 5.3% (Taiwan Research Development and Evaluation Commission, 2006). In other words, middle-aged and elderly women in Taiwan form the group with the lowest rate of ICT penetration (Institute for Information Industry, 2008).

Despite inadequate literature regarding the ICT learning of middle-aged and elderly women (Chu & Tsai, 2009), Chu (2010) have discovered that the women and older adults face similar issues when participating in e-learning. Studies demonstrate that older adults’ ambivalence toward ICT results from the limited relevance of ICT to their daily lives (Carpenter & Buday, 2007; Selwyn, 2004). Older learners are more conservative and reluctant while acquiring less knowledge in computer training (Baracat & Marquie, 1994); and both emotional and tangible family support predict aged adults’ perceived effects of e-learning (Chu, 2010). In addition, since ICT has been stereotyped as “gendered” technology biased toward men (Chu, 2010), negative attitudes and ICT anxiety arising from gender stereotyping and social context are additional factors influencing aged women learners (Bimber, 2000; Cooper, 2006; Hargittai & Shafer, 2006; Kennedy, Wellman, & Klement, 2003; Liff & Shepherd, 2004). Women’s roles within the family, such as child care at home, tend to limit women’s opportunities to use the Internet (Kennedy et al., 2003). As a result, women have less time and fewer opportunities for leisurely web use, or to acquaint themselves with ICT (Liff & Shepherd, 2004). Women also differ significantly from men in their attitudes and motivation in using ICT (Hargittai & Shafer, 2006); and they have limited competence in using ICT and require help (Liff & Shepherd, 2004). Also, women have lower confidence in, and a lower self-assessment of, their ICT skills and feel greater discomfort using it, whereas men tend to have lower computer anxiety, greater computer self-efficacy, and a more positive attitude toward ICT (Durnell & Haag, 2002; Trauth, Nielsen, & von Hellens, 2003). Men spend more time using ICT for both instrumental and recreational reasons, whereas women have only limited access to ICT and use it more for social purposes (Durnell & Haag, 2002; Imhof, Vollmeyer, & Beierlein, 2007; Kennedy et al., 2003; Liff & Shepherd, 2004).
In response to this concern, this study presents a successful social intervention, the Taiwan Women Up (TWU) program, and further discusses how to help middle-aged and elderly women overcome these negative attitudes toward ICT, as well as how to motivate them to learn and use ICT. By focusing on the interplay between the social intervention program, participant charity groups, and their ICT nonproficient women volunteer workers, this study identifies the possible barriers to ICT learning and highlights the effective methods of encouraging middle-aged and elderly women to adopt ICT. We conclude that the altruistic quality of women volunteers and the bonding between members serve as the motivation for ICT learning; meanwhile, the support from fellow members encourages middle-aged and elderly women to learn ICT successfully.

Context of Study
The TWU program, targeting women with little or no ICT experience, was launched in 2005. By providing software and personal computers and an ICT curriculum designed for women nonusers, TWU attempted to raise the level of women’s skills and confidence through ICT training. To reach potential participants, TWU worked with 19 nonprofit organizations (NPOs) in Taiwan, inviting their workers, who were mostly middle-aged and elderly women and part of the digitally underrepresented group lacking in basic computer skills, to become seed volunteers. At the time of the project, those NPOs had inadequate funding and limited ICT resources. Therefore, they considered the TWU program a good news and encouraged their volunteer workers to join in. By the end of 2006, more than 700 seed volunteers were trained; 94% of them were women.

Theoretical Foundation
This study explores how TWU uses social integration and support to enhance ICT learning of middle-aged and elderly women. The guiding theory for this research is the social support theory, which indicates a process in which individuals enhance their well-being, cope with stressful events, and achieve their goals through managing the psychological and material resources available in their social networks (Cohen & Syme, 1985; Stansfeld, 1999, p. 148). It emphasizes support group intervention aimed at providing empathy and understanding (Rodriguez & Cohen, 1998). When assessing perceived social support, one of the most commonly used measures is social provisions, consisting of six elements: guidance, reliable alliance, reassurance of worth, attachment, social integration, and opportunity for nurturance (Cutrona & Russell, 1987; Weiss, 1974).

For women, social support is a germane topic and key resource as they are more sensitive and have greater emotional connection to others (Hobfoll, 1986, pp. 4-8). Women care for others sufficiently to want to help and are likely to possess stronger communication and interpersonal skills, enabling them to network more effectively (Hobfoll, 1986; Wilkinson, 2001). Prins, Toso, and Schafft (2009) have studied a
family literacy program for marginalized women and found that an adult education program consists of more than simply learning skills; it also provides a space for social stimulation, a sense of belonging, and exchanging support and assistance. Other researchers have discovered that group members share similar experiences and may face the same stressful events; therefore, they have a common basis for understanding and can give each other valuable advice (Pfeil, Zaphiris, & Wilson, 2009; Rodriguez & Cohen, 1998). Moreover, their physical presence, “being there,” is vital for exchanging social support and companionship (Pfeil et al., 2009). By adopting the social support theory, we are able to examine the role of social support in the ICT learning process of middle-aged and elderly women who have been volunteer workers for many years, share similar experiences, and have a common basis for understanding.

Method

To understand how middle-aged and elderly women with low level ICT skills coped with the challenges of learning ICT, this study adopted a qualitative research design that focuses on uncovering meaning from the perspective of the participants and facilitates the investigation of contemporary phenomena (Creswell, Hanson, Clark Plano, & Morales, 2007; Merriam, 2002). To allow lengthy and full responses to open questions, and to encourage participants to use their own words, interviews formed the main source of data (Webb & Young, 2005).

As middle-aged and elderly women formed the most disadvantaged group within the digital divide (Institute for Information Industry, 2008), this study purposefully selected TWU women learners who were older than 40 years to explore how and why middle-aged and elderly women learned ICT (Merriam, 2002, p. 12; Patton, 1990). To recruit participants for this study, the primary researcher phoned more than 50 of the 700 TWU-trained volunteers, receiving responses from 28 spread across 13 NPOs. The interviewees ranged from 40 to 66 years in age and were middle class in terms of economic status. Twenty-six of the interviewees were married housewives, one was divorced, and one was single. Most had joined their respective charity groups and had been volunteer workers for a number of years. All informants had computers and Internet access at home, but most knew nothing about ICT before joining the TWU program. In summary, our interviewees were middle-class, middle-aged, and elderly women volunteers who had ICT access but were not ICT literate prior to the TWU project; therefore, we considered them as “information-rich cases” who would be able to provide a great deal about this issue (Merriam, 2002, p. 12).

In-depth interviews in Mandarin, lasting on average approximately 2 hours, were conducted. All interviewees were encouraged to provide their own views and personal interpretations of their motives for learning ICT as well as their learning experiences. A combination of open and closed questions was used. The majority of the questions began with “how” or “what” as a reminder to keep the questions broad and open. For example, “How did you get involved in the TWU project?” In addition, the interviewer used a guide to ensure that similar questions were addressed to each
By participating in a number of the TWU courses, the researchers were able to observe the women in the classroom where they used computers and interacted with one another. After 15 months of the project, participants were contacted again and given short telephone interviews to follow up on their ICT usage.

With the permission of the participants, the interviews were tape-recorded and transcribed within 48 hours to ensure a high degree of accuracy. The transcripts were then provided to the participants for checking, before being translated into English by the primary researcher. To ensure consistency, an instructor of English language, who was also a native speaker, reviewed the translated transcripts. Because of the sensitivity of the context, the names used in the article are fictitious.

The purpose of coding in qualitative analysis is to shatter the data and then manipulate it into groups that can be compared and regrouped (Merriam & Ntseane, 2008; Webb & Young, 2005). An inductive three-stage bottom-up process was adopted: open, axial, and selective (Webb & Young, 2005). First, the data and results were sifted to identify relevant codes. These codes provided the categorization of the data according to themes and concepts. Second, the researchers examined the codes to identify how the categories related to each other. In the final selective coding stage, these refined themes were reexamined to determine the most important among them with reference to the research topic. The interview transcripts were then reviewed to confirm the existence of the themes by extracting supporting quotations.

Findings

The following describes how TWU provides a positive social intervention and helps middle-aged and elderly women learn ICT and continue to use ICT. The discussions elaborate the motivations behind our informants to overcome their anxiety and decide to learn ICT, the obstacles from family members, and, finally, the difference between learning alone and learning with social support.

Helping and Supporting My Group

In response to our first question, “Why did you decide to take part in this project,” our interviewees explained that they had joined the TWU program because they wanted to support and help their groups. Our interviewees, who had been members of their respective groups for many years, had developed a strong sense of belonging within their groups and believed that taking part in the TWU was a way to demonstrate group solidarity. Meanwhile, ICT has become an important tool for NPOs to increase their expertise and efficiency. Yet many NPOs in Taiwan have faced the problem of inadequate funding for essential ICT equipment and training. The TWU project, which offered both free computers and ICT training, therefore, strongly motivated our interviewees. In other words, participating in TWU was more than learning about ICT; it was an opportunity for nurturance of their social integration groups. Three related themes explain the reasons for individuals’ decisions to participate in TWU.
included the following: to support my group, to get computers for my group, and to become and stay ICT-literate.

**To support my group.** As mentioned above, some interviewees participated in the project because they felt that it was a way of demonstrating support for their groups. Having been members of their groups for many years, TWU participants developed a strong sense of belonging and believed that they should join the TWU program, endorsed by their groups, as a way to show their support. Yang explained that she joined TWU as she wanted to support her group and encourage more members:

> Our leader asked us if we wanted to join the TWU project. She hoped we could act as seed members encouraging more and more people to join. I told her: no problem. I was in. (Yang, Group C)

Ju explained that when their groups first suggested the TWU project, many of the participants believed that they ought to take part simply because it was important for members to support group activities:

> Why did I join this project? It’s simply because I am a member here. I have been doing community work with this group for 30 years. They gave us this chance to learn computer skills and we should take it. (Ju, Group A)

The TWU program was not only an ICT learning activity to our interviewees; it was a part of their group project. Therefore, joining the activity endorsed by their own groups represented demonstration of solidarity.

**To get computers for my group.** To our interviewees who realized that their groups were suffering from inadequate funding for ICT equipment and were keen to help, participating in the TWU project also represented an opportunity to provide nurturance and assistance. Acquiring free computers for their cash-strapped NPOs, a number of the interviewees stated, “The main inducement for us to join this project was the free computers.” Some participants also encouraged other members to take part since the greater the number that joined, the more free computers their groups would receive. Feng, a group employee, expressed the ICT dilemma of her group and the motivation for her and her members to participate in TWU:

> Charity groups like ours really need computers. The computer hardware we had was out of date and we hoped we could upgrade it. We knew we could get free computers if we joined the TWU program. Therefore, we decided to take part and encouraged other members to do so, too. (Feng, Group L)

Knowing that more participants meant more free computers for groups, Hsi explained how their group members rallied together and joined in TWU even though learning ICT was not easy for them:

> In our group, 24 volunteers joined the TWU project. It was all for these three (free) computers. Two of the volunteers were almost 70 years old. For them,
learning the computer was not easy at all, especially as they didn’t even know any English characters. (Hsi, Group J)

Receiving free computers from the TWU program, Ling explained, actually benefited both individuals and their groups:

Our church needed computers but didn’t have the money. At the same time, my team members and I wanted to learn computing skills. Joining TWU fulfilled both the needs of our church and our team members. That’s why we joined. In the end, we all received valuable help from the project. (Ling, Group B)

**Become ICT-literate and stay.** To increase efficiency, many NPOs were faced with the task of computerizing their work flow. One NPO supervisor highlighted this by stating, “If volunteers are good at the computer, they can give us more help . . ., we want to digitize our work.” As a result, middle-aged and elderly women volunteers who were not familiar with ICT faced a dilemma. Though very experienced, they might have to change their positions or even leave the groups if they were unable to develop ICT skills, as there was no extra funding to train all the volunteers. In other words, they would not be able to help their groups if they were not ICT-literate. Under this circumstance, the TWU project presented an opportunity for volunteer workers to pick up ICT skills and remain with their groups to which they had been devoted for many years. Mei showed her determination to join TWU and learn ICT because she knew ICT skills had become important to her volunteer work and her group:

> When I joined our group in 1999, I did all my reports by hand. But since last year, everything has been computerized. I know I have to learn the computer and force myself to keep up because I am in this group. (Mei, Group F)

Sue, who had been with her group for more than seven years, explained how ICT had become essential to continue their charity work and how that had prompted her to take part in the project:

> Our group decided to computerize the work flow and many of our colleagues who didn’t have computer skills left because they were worried that they wouldn’t be able to handle their jobs any more. I really like working here, so I worried a lot, too. The TWU project came along and we were told that all volunteers without computer skills were free to join. Almost all such volunteers decided to take part. It was a good opportunity for us because we could learn about the computer for free and so stay with our group. (Sue, Group D)

Collaborating NPOs appreciated the free TWU courses offered after the project, as volunteers could be trained at no cost to the organization. Chen, an NPO supervisor and TWU participant, shared her thoughts about the TWU project:
The TWU project was a good opportunity for our groups. In the past, we could not push our volunteers to improve their ICT skills as we did not have funding or facilities for training. Through this project, many of our volunteers have learned ICT and benefited a lot. (Chen, Group K)

Attempting to show support, to acquire computers, and to become ICT-literate in order to remain with the groups to which they had a strong sense of belonging were reasons motivating our interviewees to step forward and participate in the TWU project. Thus, it is clear that the TWU program was perceived as an opportunity to help the groups to which they were devoted and with which they were socially integrated. By working with NPOs and offering free computers and ICT training as the solution to these organizations’ ICT dilemma, the TWU project successfully transformed ICT learning into group activity and connected itself to the interviewees’ lives.

**Obstacles to ICT Learning From Family**

Despite being outgoing and active within their social groups, our interviews revealed that in terms of ICT usage, many volunteers actually felt helpless and oppressed within their families. They received little help from their families in this area and, worse still, were often asked not to use the computers at home. To middle-aged and elderly women who already had low self-efficacy and little confidence in using ICT, the absence of support and help from families and the constraints they experienced in using their home computers hindered their ICT learning. The following themes further revealed the paradox faced by our interviewees.

**Absence of support from families.** Complaints about lack of support from family members were widespread among our interviewees, who had only recently started to learn ICT and were anxious and lacking of confidence in this area. They felt hurt and rejected when their families shunned them. Some complained that their children lacked patience when assisting them with computer problems. Ling shared her experience:

> I tried to make a table in Microsoft Word and I didn’t know how. Although my husband had shown me briefly before leaving for work, some problems still occurred. I sought my son’s help. However, he was really impatient. I couldn’t stand his attitude. I just couldn’t ask him questions. (Ling, Group B)

Lee said that she did not like to ask her son for help because he always replied,

> Mom, you are so stupid. I have told you so many times and yet you still can’t get it. (Lee, Group F)
Husbands did not offer much help either, and were seldom asked as they were too busy at work, lacked patience, or failed to offer appropriate assistance. Liang described why her husband could not give her help:

I don’t ask my husband questions about the computer. He is very busy at work and feels tired when he returns home. Moreover, he isn’t very patient. If I do something wrong, he criticizes me. When I first began to learn the computer, he told me that he could teach me, but after several attempts, he gave up. (Liang, Group M)

Hui explained that her husband could not help her as he did not understand what she needed. When she tried to seek help from her husband, who was a university professor in a computer-related field, her husband did not listen to her. Instead, he handed her a textbook used by college students. She could not understand the book and so stopped asking him for help:

I asked my husband to teach me about the computer once. He taught me nothing, but instead handed me a huge book. He said that I should read that book first. It occurred to me that if I could have read and understood the book by myself, I would already have known how to use a computer! (Hui, Group K)

For middle-aged and elderly women, learning ICT was not easy. Although they recognized its importance in the modern world and were willing to learn, the lack of support from family members left them feeling anxious and helpless.

“I can’t touch my son’s computer.” Our interviews revealed that middle-aged and elderly women had very limited access to ICT in their homes. Having computers and Internet connection at home did not necessarily mean that they had an opportunity to use them. They explained that their home computers were used mainly by their children, who believed that their mothers were incapable of using them and, worse still, might cause serious damage. Therefore, many of our interviewees were simply not tolerated when they tried to use their home computers. Hsu stated that both of her sons had set passwords on their computers to prevent her from using them:

I found that I couldn’t use my sons’ computers because they had set up passwords to prevent me from logging in. I asked them to unlock them, but they refused. They didn’t let me use their computers. Every time I wanted to use one, they just said: “Tell us what you want to do and we’ll do it for you. You don’t need to use our computers.” However, I didn’t need anyone to do anything for me; I just needed to practice. (Hsu, Group C)

Shan and May explained that their families did not like them using ICT at home as they were viewed as “trouble makers” who would cause serious damage:

My son told me: “Mom! I beg you not to use my computer anymore. Please!” He said he was afraid that I might erase all his data. (Shan, Group A)
May also recounted,

Many of my classmates were asked by their children not to use computers at home. Their kids told them: “Mom, don’t use my computer. You’ll make my stuff disappear. If you need anything, just let me know and I will do it for you.” (May, Group I)

Faced with this obstruction, our interviewees became even more anxious about using computers. They were afraid of deleting files or accidentally damaging the computer, which would lead inevitably to serious family trouble. Some informants felt afraid and unhappy about having to shoulder the blame when home computers broke down. Mei said,

It is not just that our children don’t let us use the computer. It is that we don’t dare. How can a mother use her children’s computers? If you do and everything goes OK, then you are OK. But once something goes wrong with their computers after you use them, then, you are in big trouble. (Mei, Group F)

Jean had a similar experience:

We are the ones who are yelled at by our children when the computers are not working right. In other words, we are responsible for all computer problems at home. (Jean, Group B)

These unhappy experiences and unexpected computer malfunctions sapped the confidence of our interviewees. Encountering unknown ICT and various learning difficulties without having anyone to turn to rendered ICT learning frustrating and disappointing for our interviewees. Meanwhile, the interview data above also explain why learning ICT is difficult for aged women and demonstrates the importance of group support to these women.

**Social Support From Social Groups**

Social support, including attachment, guidance, and reliable alliance, from team members was the key reason given by our interviewees for continuing on the TWU project and persisting with their ICT learning. For aged women in our study, compared with their previous experience of learning alone, learning ICT with fellow members became a relaxing and comfortable experience and helped them overcome their anxieties and frustrations. It allows them to know where to seek help, receive useful guidance, and feel being understood as members gave each other emotional and practical support. Meanwhile, this also created an ICT-learning community together. The following themes describe the previous learning experiences of our informants and then compare their previous experiences to the TWU ones.

*Perplexed and embarrassed in the past.* Some of our interviewees had had unhappy experiences of trying to learn computer skills in the past. They had enrolled in
computer courses, but, being on their own, had felt lost and had encountered problems keeping apace with the rest of the class. They were afraid to raise questions as they were concerned that other students might look down on them on account of their lack of computer knowledge. Meanwhile, they had little help either during class or afterward. As a result, for much of the time they felt frustrated, soon lost confidence, and finally gave up. Hsu, who had studied ICT alone before the TWU program, stated that she had felt concerned about losing face in front of her unknown classmates:

Prior to the TWU project, I once enrolled on a computer course which was offered by my child’s school. It was designed for people who knew nothing about computers, so I thought I would give it a try. But the course moved too fast for me because I knew nothing. If I made mistakes or fell behind with the class notes, I didn’t know what to do. I was too embarrassed to ask questions in front of people I didn’t know, so all I could do was just sitting there. (Hsu, Group C)

Some informants reported having felt lost and confused in previous courses since they had no idea what the instructor was teaching, and therefore, did not know how to ask questions. May stated,

In a previous course I attended, I simply didn’t know what to do during the class. The teachers always asked us if we had any questions, but the truth was we couldn’t ask because we really didn’t understand what the teacher was talking about. It’s very difficult to ask a question when you know nothing at all. We didn’t even know where to look for the question! (May, Group I)

No longer losing face. In contrast, attending the TWU course with fellow group members reduced the confusion and embarrassment of the middle-aged and elderly women learners. The attachment and empathy within the class reduced the anxiety associated with ICT learning. Participants in the TWU project understood that everyone was in the same situation, all knowing very little about computers. When they were confused or when problems arose, they knew that others members would be feeling exactly the same. Therefore, they did not feel as if they would lose face; instead, they felt free to check with each other and raise questions together. Sung commented,

Taking part in this course with fellow group members was more relaxing. We knew each other and if I didn’t understand what the instructor had said, I could be sure that others didn’t know either. So, asking questions was OK. I didn’t need to worry whether I had asked a silly question. (Sung, Group A)

TWU participants were not perplexed but felt comfortable since they were able to discuss issues and share answers with their classmates. When problems arose, students checked with each other and attempted to find solutions together. Stronger
students helped weaker ones by giving them step-by-step guidance. If none of the classmates knew the answer, they would then raise the issue with their instructor. Helping and solving ICT difficulties together, they were able to overcome their confusion, learn more effectively, and build up their confidence. Tai pointed out,

I didn’t fear losing face in front of my colleagues. We know each other very well; we are close. If I had problems, I checked with my classmate next to me. If she knew, she would help me. Otherwise, we would ask the instructor. In our class, I felt no embarrassment asking questions because many of my colleagues asked questions, too. We helped each other all the time. (Tai, Group L)

Learning ICT in the TWU Project with team members whom they had known and worked together with for years made the learning experience a pleasant one. One of our researchers once joined one of the classes for observation. All the students in the class were older than 50 years, with the oldest being 70 years. The instructor taught clearly and slowly, step by step. If students had questions, they asked the classmates next to them, the instructor, or the teaching assistant. They did this very naturally and did not hesitate either to ask for help or to assist others. The class had the feeling of an old school reunion.

**Trusted alliance and effective guidance.** In addition to in-class assistance from colleagues, help from other members outside class was also important. When practicing at home after class, our interviewees would turn to each other for help if they encountered problems. Some NPO employees and other volunteers had good computer skills and were willing to help. Since the interviewees knew where to turn for effective advice, they did not feel so frustrated or helpless. In this way, they felt encouraged and gained confidence to continue their learning. Sue shared her experience:

> Colleagues in our group were very friendly and kind. When I had a problem, I could ask them and they would help me right away. Then, I would practice to make sure I had really mastered it. My colleagues taught me a lot. Sometimes I talked to them via MSN to make sure that what I had learned was correct. (Sue, Group D)

Liang also commented,

> When I have a problem using the computer, I ask neither my husband nor my daughters. Instead, I ask volunteer workers in our groups. They are good at the computer and they are very nice. Even now, I still ask them if I ever have a computer problem. (Liang, Group M)

Fifteen months after our initial interviews, we conducted further short phone interviews. Twenty-five interviewees continued to use email and the Internet to contact friends and to search for and share information. TWU participants had continued to use ICT after the completion of the program. Learning with other group members had cemented their connection with ICT.
Discussion

This research adopted the social support theory and revealed that social integration, intention to nurture their belonging group, and altruistic qualities of women served as the trigger for motivating middle-aged and elderly women nonusers to learn ICT in this case. Our study shows that a strong desire to remain with the groups and members they cherished and to nurture their organizations provided the motivation to learn. Previous research pointed out that women and elderly people tended to use ICT for social reasons (Bimber, 2000; Carpenter & Buday, 2007). The study further elaborates on presenting an effective example of how to engage women in the ICT learning process. For example, Prins et al. (2009) discovered that the marginalized women in family literacy program developed “a sense of belonging” and formed a strong supportive relationship; consequently, they were willing to stay in the program and exchange assistance. Similarly, the TWU learners, who were altruistic and had been with their groups for years, were motivated to participate with their groups because they had developed deep bonds and a strong sense of belonging with respect to their fellow members. The TWU project successfully identified these characteristics and provided motivation by offering free computers to the organization and ICT training to the members. Learning ICT was no longer irrelevant to them; instead, it took on a positive significance for the participants, and they were inspired to learn as a way of “helping and supporting my group.” Many nonusers find little motivation or necessity to learn ICT as it seems to be unrelated to their daily lives. To effectively introduce computing skills to nonusers, a connection needs to be made between ICT and people’s lives. In addition, the motivation of the target group needs to be defined.

Furthermore, this study found that social support, such as empathic attachment, useful guidance, and reliable alliance, allowed the TWU learners to overcome their fear of embarrassment and general anxiety about using computers. Prior to joining the TWU project, a number of interviewees had attempted but did not succeed to learn ICT on their own. In contrast, in the TWU project, most of them successfully completed the course and, equally important, continued their ICT use after the project ended. The difference between learning alone and learning with other group members is worth noting. Pfeil et al. (2009) report that older community members are able to provide each other with deep social support both through their physical presence and also through the common thoughts and feelings they shared. TWU participants had similar anxieties and were thus able to empathize with, and understand, each other better. They could “be there” for each other and offer useful experience-based guidance. Knowing where to seek reliable advice and help without hesitation enhanced their learning. From knowing nothing about ICT to becoming ICT literate together, strong bonds were created, and ICT usage became a common denominator. This strength of social support not only encouraged women to take part in the ICT project but also helped them to persevere with their learning. As a result, most of the interviewees now feel empowered and confident to use ICT. For women who value social connections and relationships, this positive intervention with social support has helped them to overcome their fears. By learning together and caring for one another, our
Interviewees found a way to support their NPOs, gained important ICT skills, and became more self-confident.

A major challenge that the ICT project initiators are facing is how to effectively recruit the potential learners effectively and ensure sustainability of ICT learning. To this end, the TWU project offers some practical insights by successfully accessing its learners through NPO partners. Working closely with NPOs, TWU was able to attract, and earn the trust of, groups of middle-aged and elderly women volunteer workers. Furthermore, it encouraged its participants to recruit more learners by offering free computers. Consequently, TWU participants felt inspired to continue their ICT learning precisely because so many of their fellow NPO members were also participating in the project. The TWU project thus became a shared point of interest. For TWU, this resulted in a more widespread and effective application of ICT training.

In addition, what concerns us is the degree of helplessness felt by the interviewees when confronted with the task of learning basic computer skills alone. Many were hindered by negative feedback from their families. Several studies have pointed out that underlying gender-specific phenomena and family influences significantly limit women’s ICT learning (Bimber, 2000; Cooper, 2006; Merriam & Ntseane, 2008). However, by looking at real-life experiences, this study provides a clear picture of the challenges faced by women when attempting to participate in ICT. Family members become obstacles, ignoring interviewees’ attempts to learn, providing little help, and even preventing the participants from using the computers in their own homes. Although family members are assumed to be the most common source of help and considered significantly important for women (Chu, 2010; Liff & Shepherd, 2004), family, in fact, becomes a hidden obstacle to ICT learning. Learning does not simply happen once users have ICT access. Liff and Shepherd (2004) point out that learning ICT skills requires a supportive environment and encouragement; otherwise, “a machine in the same room might be as inaccessible as one five miles away.” Middle-aged and elderly women need much more than ICT access. Timely guidance, sympathetic understanding and encouragement, and inspiring motivation all play important roles in the successful acquisition of ICT skills.

Conclusion

This study reports a successful example of middle-aged and elderly women learning ICT skills and becoming ICT literate through the social support of their charity groups and fellow group members. With the realization that the core issues of the digital divide involve more than simply access to ICT equipment, more prudent consideration is required when addressing the issue of ICT nonusers. It is unrealistic to expect isolated women learners with little confidence to actively and successfully undertake courses and projects in ICT learning without first removing potential obstacles and amplifying the benefits. By cooperating with NPOs, the TWU project identified the altruistic qualities of women volunteers as well as the importance of social bonding and support within the charity groups. It was thus able to effectively intervene to
motivate ICT nonusers. In addition, the loyalty to one’s social support group and the bonding with close members of this group were the keys to success in this project. Empowered by the TWU project, middle-aged women learned ICT skills and regained their confidence.

While providing valuable information and highlighting some of the key factors about the adoption of ICT by middle-aged and elderly women, the limitations of this study should not be overlooked. First, a random selection of interviewees was impossible since only those who had accepted the telephone invitation could be interviewed. Second, the interviewees were volunteer workers from charity groups and NPOs in Taiwan, and as such they may have been more socially active than other women. Moreover, most were middle-class housewives and may be different from other socio-economic groups. As ICT learning among underrepresented groups remains a great challenge, we suggest that future research attempts to contact a wider range of potential participants and various groups. Furthermore, the underlining of the importance of social support and social bonding also provides a basis for future research.

There is insufficient understanding of the everyday social and technical realities and experiences of middle-aged and elderly women ICT learners. By examining the real-life experiences of these women, we hope to address this lack of understanding and establish a successful model for future ICT education with some practical suggestions. Since many middle-aged and elderly women have fallen behind with ICT learning, the fruitful outcome of the TWU project provides a useful and practical reference for both women and other underrepresented groups.

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