Improving English Language and Computer Literacy Skills in an Adult Refugee Program

Henriette Janse van Rensburg (vanrensb@usq.edu.au) and
Jeong-Bae Son (jeong-bae.son@usq.edu.au)
Faculty of Education, University of Southern Queensland, Australia

Abstract

With a focus on ways of improving English language and computer literacy skills of adult refugees in Australia, the study reported in this article examines the usefulness of a community program offered for five female Sudanese refugees who had very limited English language proficiency and very little or no computer experience. Main teaching strategies used for this group were repetition, content and language integrated learning (CLIL) and computer-assisted language learning (CALL). By analysing data collected from questionnaires, interviews and tests, the study looks at and discusses the possibility and opportunity of using the computer as an educational tool during contact sessions and the participants' experience with Web-based language learning (WBLL) activities. The results of the study indicate that the computer can be used to encourage learners in a refugee program to engage with their learning and online activities are helpful for them in improving their English language and computer literacy skills.

Keywords: English language learning; computer literacy; computer-assisted language learning; learner engagement

Introduction

On-going civil wars in countries such as Sudan over the past two decades have resulted in major humanitarian crises (Brown, Miller & Mitchell, 2006; Menkhaus & Prendergast, 1999). Since 2001, Australia has accepted more than 21,000 refugees from Sudan (Australian Bureau of Statistics, 2008). According to figures released by the Australian Bureau of Statistics (2007), Sudanese-born people are the fastest growing group in Australia, increasing by an average 26% per year over the past eight years. Brown et al. (2006) state:

> Sudanese refugees currently constitute the largest single group of arrivals to Australia under the Humanitarian Immigration Program. Many have been in camps, experienced trauma, lost members of their families, had minimal schooling and arrive with little or no literacy. ... They face great challenge in terms of acculturation, social adaptation and English language" (p. 1)

Sonderegger, Barrett and Creed (2004) also point out that moving to a new country and learning the social norms of a new culture is a difficult process. However, there is little literature that documents specific language and literacy issues that Sudanese refugees face when they attempt to settle in Australia. Research is therefore needed to develop programs and resources to meet the educational needs of the refugee group (Brown et al., 2006).

There is a significant linguistic and cultural diversity among the refugees. Although Arabic is the official language of Sudan, it is spoken as a first language only in the North of Sudan. Dinka, Nuer, Shilluk, Zande and Bari are main languages of Southern Sudan (Rutter cited in Brown et al., 2006).

Brown et al. (2006) report that, because many Sudanese refugees have interrupted or no substantive schooling, "many of the refugees have little or no literacy in either a first or second language prior to arrival" (p. 151). In a way of responding to the literacy issue, this article describes a community program offered for adult female Sudanese refugees in a rural Queensland city and explores ways of improving the refugees' English as a second language (ESL) and computer literacy skills in the program.

Background

Many Sudanese refugees spent several years in refugee camps in Kenya and Egypt where they had interrupted schooling and limited or no opportunity to develop their literacy skills (Hatoss & Sheely, 2009). Schweitzer, Melville, Steel and Lacherez (2006) argue, "Resettled refugees from Sudan evidenced a history of trauma ... and may constitute a particularly vulnerable group in terms of mental health outcomes. Culturally specific sequelae in terms of social isolation and acculturation may be particularly problematic for these migrants" (p. 1). It is clear that these refugees need a lot of support in order to resettle. In line with this, the Victorian Foundation for Survivors of Torture (VFST) was established to support the resettlement of refugees in Australia (Mitchell, Kaplan & Crowe, 2007). The VFST's core recovery goals include emotional support and care, restoring dignity, meaning and purpose to life. Its recovery model responds to language, cultural and social changes that refugees experience during their resettlement. Taking the context of the study reported in this article into consideration, the community recovery model is adapted and modified as shown in Figure 1. In terms of the relevance to the study, specifically, the goals 1, 3 and 5 are directly covered by the study while the goals 2 and 4 are covered by the study indirectly.
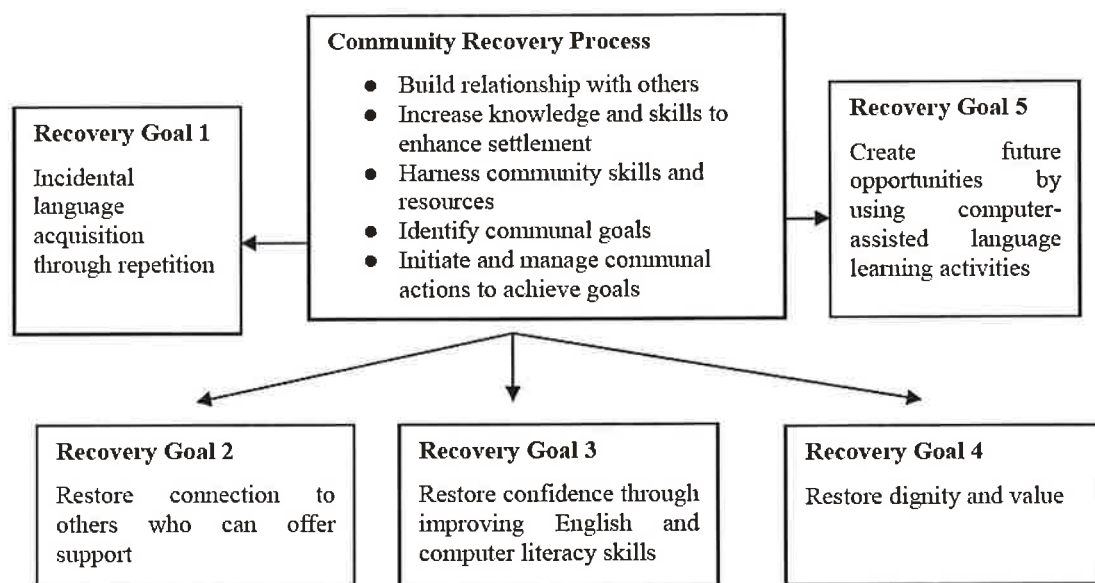

Recovery Goal 1

Incidental language acquisition through repetition

Community Recovery Process
- Build relationship with others
- Increase knowledge and skills to enhance settlement
- Harness community skills and resources
- Identify communal goals
- Initiate and manage communal actions to achieve goals

Recovery Goal 5

Create future opportunities by using computer-assisted language learning activities

Recovery Goal 2

Restore connection to others who can offer support

Recovery Goal 3

Restore confidence through improving English and computer literacy skills

Recovery Goal 4

Restore dignity and value

Figure 1. Community recovery process (adapted and modified from Mitchell, Kaplan & Crowe, 2007, p. 286)

For the last two decades, information and communication technology (ICT) has been used for language teaching in various ways. Its focal point has moved from drill and word processing to more "interactive applications such as e-mail, chat, and web-based programs, requiring learners to acquire computer literacies" (Murray, 2005, p. 1). Warschauer, Shetzer and Meloni (2000) assert

that the World Wide Web (WWW) adds "a new dimension to online communication and learning" (p. 2). Son (2007) agrees that the Web offers "a global database of authentic materials that can enhance language learning and teaching" (p. 1) and points out that classroom-based activities can be complimented by the Web, which provides a more learner-centred style of instruction. With a similar perspective, Sotillo (2000) claims that the shift from a teacher-centred to a learner-centred theory of learning is a direct result of technological innovations. She also states that computer-mediated learning activities can increase "greater participation by people in subordinate positions, women, minorities, shy students, and the physically challenged" (p. 83). In addition, Warschauer et al. (2000) support the view that the Internet can be "a useful tool for encouraging greater participation of quiet and shy students" (p. 3) and can enhance students' motivation. Specifically, Alessi and Trollip (1991) highlight that Internet-based games can provide learners with interesting challenges and often motivate learners to learn. Ke (2008) also points out that "computer games, compared with paper-and-pen drills, were significantly more effective in promoting learning motivation" (p. 539).

The Study

Aims

The aims of the study were to explore ways of improving English language and computer literacy skills of adult refuges in Australia and to examine the usefulness of a community program offered for Sudanese refugees in the community of a rural Queensland city. Data from questionnaires, interviews and test results were collected and analysed to look at the use of the computer as an educational tool during contact sessions and participants' experience with computer-assisted language learning (CALL).

Subjects

A total of five adult female Sudanese refugees volunteered to take part in the community program. Their ages varied from 19 to 56 years and they have been in Australia between one and seven years. Three of the participants had no schooling while the remainder attended a primary school for 2 and 4 years respectively. All participants were accompanied by their families when they migrated to Australia.

Materials and learning theories

During the program, a number of Web-based language learning (WBLL) materials and free games downloaded from the Internet were used in order to meet the participants' needs, maintain their interest and keep them motivated. Basic computer terminology was introduced through computer games and online language activities. In selecting and using the WBLL materials, several learning theories were applied. First, content and language integrated learning (CLIL) was considered and adapted to main sessions of the program with the idea that "L2s should be used as tools in the learning of non-language subject, in such a way that both the language and the subject have a joint curricular role" (March cited in Lorenzo, 2007, p. 503). Second, situated learning was adapted for improving participants' program-solving skills as supported by Cognition & Technology Group at Vanderbilt (1993) saying that situated learning has been applied "in the context of technology-based learning activities for schools that focus on problem-solving skills" (p. 52). In line with the construction of knowledge, third, a constructivist approach was taken on the basis of the notion that "learning is an active process in which learners construct new ideas or concepts based upon their

current/past knowledge" (Bruner, n.d., p. 1). Finally, Knowles' (1980) theory of andragogy, which emphasizes that adults are self-directed, was considered in the implementation of the program. For the design of personal computer training, in particular, Knowles (1984) suggests applying the following principles: (1) adults need to be involved in the planning and evaluation of their instruction; (2) experience (including mistakes) provides the basis for learning activities; (3) adults are most interested in learning subjects that have immediate relevance to their job or personal life; and (4) adult learning is problem-centered rather than content-oriented. Together with other theoretical considerations, these principles were also adapted to the implementation of the program.

Instruments and procedures

Creswell (2008) states that a focus group (typically four to six participants) can be valuable when the time to collect information is restricted. In this study, possible focus group participants were identified by the local Refugee and Migrant Support Centre staff. The staff conducted interviews with all immigrants and categorised them into groups according to their English language ability (Group 1 = no English skills; Group 2 = limited English; Group 3 = basic English skills). The staff then asked Group 2 immigrants to volunteer for five places in the program. The centre was equipped with nine computers with Internet access at the time when the study was conducted.

The quantitative and qualitative methods selected for the purpose of data collection included the followings:

1) An exploratory survey of migration history, personal and education profile, and level of computer literacy followed by a short interview. During the first contact session, the classroom teacher (one of the researchers) assisted the participants in order to complete a 'personal information and computer literacy questionnaire'.

2) Computer sessions: The participants were exposed to two-hour contact sessions per week over a period of 12 weeks. Computers were used as an educational tool to improve the participants' English language skills and to teach them basic computer literacy skills. Table 1 summarises the activities implemented during the contact sessions.

3) In-depth interviews: All participants were interviewed during the last contact session. The interviews were audio taped and transcribed with the assistance of a Sudanese interpreter to avoid any miscommunication.

Table 1 Session Activities

Session	Activity
1	Personal information questionnaire and interview
2	Introduction to the computer and a computer pre-test
3	Introduction to the mouse - Puzzles
4	Language proficiency pre-test
5	The use of the mouse - Puzzles (Repeat)
6	The use of the mouse - Cross word puzzles
7	Food Game
8	Introduction to the Internet
9	Creating and saving a document in Open Office

Session	Activity
10	Internet-based activities and a computer post-test
11	Language proficiency post-test
12	Final interview

Findings

Previous experience with the computer

The average age of the five female participants was 36 and they have been in Australia for 3 years on average. Their native languages were Dinka, Arabic or Acholi. They had little or no schooling and limited or no exposure to computers. The following table provides a snapshot of the participants:

Table 2 Background Information on Participants

Name (Pseudonyms)	Age	Home language	Years in Australia	Years in school	Qualifications	Previous computer use
Rita	30	Acholi	3	0	None	None
Ellie	56	Dinka	4	0	None	None
Marie	19	Arabic	7	4	None	Listened to music once
Claire	24	Dinka	1	2	None	None
Dina	45	Dinka	1	0	None	Little; when her child was working on the computer

From the first meeting with the participants, it was evident that they found it difficult to express themselves with their limited English language abilities. The situation was similar to Brown et al.'s (2006) study where they found language and literacy problems of their Sudanese group. However, all participants felt excited about using the computer and were very eager to learn although they had no idea of any activities that could be done on the computer. Four did not know that they could write a letter on the computer while no one had any idea of how to print a document.

Use of the computer and the Internet

The classroom teacher observed that Ellie wrote extremely slowly and found it hard to understand her writing. Marie had a physical problem with her right hand (partial paralysis). She was very shy and struggled with spelling and conversations. She could not concentrate on the work and was always looking around. Dina repeated every word and phrase after the teacher. Rita was very engaged and understood easily.

Before the 'Introduction to the computer' session, the participants took a pre-test, which they had to label pictures by using the following words: *printer, keyboard, mouse, computer tower, hardware, floppy disk* and *monitor*. The average score for the pre-test was 20% (1.4 out of 7). It was a reflection of their familiarity with computers. Three participants could label the keyboard and/or the mouse correctly and only one had the monitor right. After the pre-test, the participants were

formally introduced to computers and computer-related terms (e.g., *hardware, software, computer screen, printer*). They found it difficult to understand the functions of system units and data storage devices. They were shown how to turn on the computer and how to use the keyboard with explanations of the functions of various keys (e.g., *shift key, enter key, space bar, arrows*). They typed short sentences and were amazed to see the information appeared on the screen. This correlated with the finding of Janse van Rensburg (1999), who described it as an "aha moment".

During the third session, the learners were given a worksheet with specific instructions on how to get to online puzzles. They found it difficult to type the given Web address; it seemed to be their first contact with the colon and forward slash keys. They enjoyed looking at beautiful pictures of different puzzles. From their reactions, the teacher realised that the participants had no previous experience or strategy in building a puzzle. The staff at the centre stressed the fact that some of the refugees spent many years in refugee camps and that it was not common in their culture to play games with their children. Tandon (2004) states that life in a refugee camp can be tough:

> With temperatures soaring to 120 degrees on a good day ... The camp was a moonscape of unspeakable agony and pain. As far as the eye could see tens of thousands of people were living in grass and cardboard structures – stuck in the middle of nowhere. These people have nothing – no food, water, clothing, health services, electricity, or basic services. (p. 1)

It was obvious to the teacher that this type of environment would not be ideal for engaging in games as supported by Urwiler and Frolick (2008), who say that "most basic human needs must be satisfied before higher level human needs are generally pursued" (p. 84).

After explaining the procedure, the participants started to build 6-piece puzzles. They were asked to look for a piece with 'left corner', 'right corner', 'middle piece with a flat top area' or 'bottom piece'. Instructional words (e.g., *up, down, cursor, click, drag*) were often repeated. After becoming familiar with the easy puzzles, they moved on choosing and building another 12-piece puzzle. Interestingly, they asked for this session to be repeated.

Marie started the program being very introverted and incapable of concentration. However, the centre manager noticed that Marie started to arrive at the centre before the centre was officially opened, and could not wait quietly for her computer session to start. The staff at the centre reported that she was very restless and only relaxed once the teacher had arrived. On the other hand, it was not easy for Clare to move the mouse with her partially paralysed hand. She persisted and tried many ways until she could manage a firm grip on the mouse. At the end of the session, she changed herself completely. She asked questions, wanted to do more work, grasped the work quickly and became very confident. She eventually assisted the other participants when they experienced problems. Dina kept repeating every single word that the teacher was saying; it was assumed that her learning strategy was that of listening and repeating.

It should be important to keep purposes, content and target population in mind when selecting a suitable and appropriate CALL activity. The language proficiency pre-test was user friendly and included very basic language components. The participants took about 35-40 minutes to complete. They were very surprised to see their online scores immediately after the completion of the test. However, they did not enjoy the online pre-test at all. It was assumed by the teacher that it did not stimulate their interest and motivation. The average score of the pre-test was 41.2% (ranged from 28% to 58%). After the pre-test, the questions of the test were discussed and basic language rules (e.g., keywords indicating past, present and future tenses, prepositions, the difference between *much* and *many* and between *a* and *an*) were explained by the teacher. The teacher could notice that the participants looked very tired after the session.

At the beginning of the following session, the participants were introduced to 3 dimensional wooden puzzles. They were told to look at a picture in a box and then build a similar picture with wooden pieces. They were urged to find a piece with 'left corner', 'right corner', 'middle piece with a flat top area' or 'bottom piece'. During the session, they learned a number of new words incidentally. The participants were also introduced to the mouse while engaging in an online puzzle activity. After the introduction, they spent the rest of the time in building online puzzles and managed to build the 12-piece puzzle with ease. The use of the mouse became natural and everybody could manage without problems. Everybody enjoyed the activity and asked to repeat the activity. After the online puzzle activity, the participants were introduced to crossword puzzles. They followed the specific instructions given on a worksheet to get to online crossword puzzles. They found it difficult to type the URL of the target Web pages, especially the *hyphen* key. The teacher explained the basic rules of completing crossword puzzles. The following words were explained and repeatedly used: *across, down, hint, check puzzle, enter* and *clue*. The participants enjoyed the crossword puzzles and managed them successfully. After several attempts, they obtained the following scores for their final crossword puzzle: Rita 84%, Ellie 100%, Marie 96% and Dina 100%. Clare was absent at that time. It seemed that Dina's strategy of repeating was working for her in a very positive way. All participants started to be very confident with the use of the mouse and keyboard; they were getting familiar with basic computer terminology.

While playing the 'Food' game, the students were engaged in meaningful activities where they could relate to the purpose of learning. The game enhanced their level of motivation and provided the students with entertaining challenges. The instructions for the game were: "You are stranded on a deserted island. You car is out of gas. Match words with the food groups they belong to and find your way back to civilization." Prior knowledge about different food groups was important. The teacher introduced the session with a worksheet related to food groups. While the participants were playing the game, they came across various names of products that were unfamiliar to them: for example, *bacon, muffin, bagel, spaghetti, plum* and *cauliflower*. It was sometimes very difficult for the teacher to explain these concepts to the participants who had very limited knowledge of the English language. The teacher then started to use images that could be found on Google to make the concepts recognisable. While looking at a picture of a *muffin*, for example, Rita said, "Okay, it's like a cake." All participants thoroughly enjoyed looking at the pictures on the Internet. This idea of visualising the products paved the ground for the next lesson.

The participants were very eager to look at images and pictures on the Web. They were asked to make a list of topics or keywords of things they were interested in. They were curios to get more information, but found it very hard to read the informative text associated with the images. For example, Marie looked for a picture of a *dragon*. She told the teacher that she was very fond of shopping and saw a blouse with a beautiful dragon. She was not satisfied with any of the images she found, and after more explanation, it seemed that she meant a *dragonfly*. When she saw a picture of *broccoli*, she responded: "Ah, make it with water … soup." Rita looked at a picture of spaghetti and said: "Wow! I know, I eat it with small meat (mince)." At the same time, all participants wanted to see pictures of Sudan. They spent hours looking at the pictures and the teacher had to read various articles and explain the actual textual story. They got extremely excited when they recognised areas, buildings, traditional Sudanese dishes and people. They shared stories of what they had experienced in Sudan in relation to the images. It was obvious that they carried a lot of cultural baggage from the trauma that they experienced in the past. They always returned to the images that captured malnourishment of children and adults. It seemed that their worldview was indoctrinated by poverty and limited opportunities. It also appeared that they built up trust with the teacher, as evidenced by a report from the centre staff saying that, when the teacher was absent from the class on one occasion, the participants refused to cooperate with a male volunteer who was to run the class.

During Session Nine, the participants were instructed to create, save and print a document. They could follow the instructions on a worksheet and typed information with ease, but needed assistance in saving their documents. They were not familiar with the procedure and needed more practice. It was their first experience with the printer and they were amazed by printed images. After the session, their responses to the question "How do you feel about using the computer now?" included: "Yeah! Good. I want to learn!" (Rita); "Good. I can save a document. I am happy" (Ellie); and "I want to do email now" (Marie).

Post-tests

The participants undertook a computer literacy post-test where they had to label pictures with the given computer-related words. It was exactly the same test that they completed before the 'Introduction to the computer' session. The average score of the post-test was 100%. It seemed that the regular use of those words during the contact sessions was clearly internalised by all participants. The teacher was impressed by their acquired computer literacy skills. After the post-test, the participants spent more time in looking at images on the Web. They assisted each other when somebody needed help in sharing images, but they always went back to images of Sudan. When they were allowed to print a few images, almost everybody printed images that captured malnourishment, agony and pain. Marie ended the lesson in a more positive way and grabbed the chance to print pictures of her beloved dragonflies.

After ten weeks of engaging in the adult refugee program, the participants also completed a language proficiency post-test, which was exactly same as the language proficiency pre-test. The following table shows a snapshot of the language proficiency pre- and post-test results.

Table 3 Results of the Language Proficiency Tests

Name	Pre-test %	Post-test %	Difference between pre- and post-test %
Rita	39	87	+48
Ellie	28	84	+56
Marie	58	34	-24
Claire	31	91	+60
Dina	50	*	*
Average	41.2%	74%	+32.8%

Note: *Dina was not present during the post-test due to illness.

It could be argued that the exposure to and immersion in the language program have improved the participants' English language proficiency. Although Marie got the highest score from the pre-test, however, she did not show any improvement in the post-test. The reason for the low score seemed to be her low interest in the test itself. She clearly said to the teacher that she was not interested in the post-test at all; instead, she just wanted to play games or look at pictures on the Web.

Interviews

The final interviews were conducted by the teacher at the centre with the assistance of a Sudanese interpreter recommended by the centre staff. All the interviews were recorded and translated by the interpreter. Dina was not present during the interview session. A summary of the participants'

responses to the interview questions is given below. Overall, all of the participants seemed to enjoy using the computer for learning the English language.

> I need more skills about the computer; I need to know English more. (Rita)

> I need to operate the computer. That's why I enjoy it very, very much. (Ellie)

> Yes, it is good. I am enjoying it. Because … I don't know … because I don't know how to work on the computer yet. But I can work it now … a little bit. I want to learn more to have computer skills. I want to talk English fluently. (Marie)

> Yes, yes, we need to have computer skills; I need to talk in English fluently. (Clare)

The participants took pleasure in all sessions. When they were asked what they enjoyed the most and the least, they replied that they liked everything and there was nothing that they disliked.

> They are all enjoyable; they are all good for me. (Rita)

> I like all of them most, I like everything most. (Ellie)

> I like music and working with the computer. I like to look at anything, I like the pictures. (Marie)

> I like them all, to learn about the computer itself and English as well. I like the games and the Internet. I enjoyed the pictures. (Clare)

They felt very positive about using the computer after being involved in the program; they enjoyed the lessons and wanted to learn more. Marie summarises, "I am feeling good because … all my thinking, everything. I like the computer the best. My concern is of learning the computer and English."

Everybody echoed that they would like to learn more about computers.

> Yes, I want to know more about the computer to operate it alone and to read anything in the computer, news, music and all those. (Rita)

> I have really enjoyed it very, very much. I want to know more about the computer and English as well. (Ellie)

> Yes, more and more. (Marie)

> Yes, I want to learn more. I would like to operate the computer by myself, read the news about Sudan and the world as well. (Clare)

The participants learned how to write a letter on the computer but still felt unease to work on their own without the help of the teacher.

> It is still hard for me to write a letter. (Rita)

> I can do it, but very slow. (Ellie)

> I can't, because I can't write with one hand. Because I don't have a strong hand. You can write it. Yes, I can write it. (Marie)

Yes, you can write it on the computer but I do not know how. I don't yet have that skill … removing it or getting it out of the computer. I can not do it, but you can get the letter out. I do not yet have the skill to take the letter out of the computer. (Clare)

They also learned how to print a letter but were hesitant to use the printer because they felt that they were not experienced enough.

Mmm, if you want to take it out, you use a printer. (Rita)

I know that if I write something on the computer, I can remove it. But the way to print it out is still hard for me. But I know it is there in the printer. (Ellie)

I don't know. Yes, the printer. (Marie)

The letter will get out of the printer. (Clare)

The participants agreed that their English language ability has improved since they started the program. Rita and Ellie elaborated:

I am improving, I am not like the way when I started … long, long time. I am now improving. I know some other things that I did not know, yes. (Rita)

No, not much, I am getting just a little bit. My English is improving, it is not like before. (Ellie)

They also agreed that their computer skills have improved since they started the program and expressed their gratitude towards the teacher for the opportunity:

Yes, I am improving. First of all when I started here, I did not know about Google, I did not know about the Internet, I did not know about opening the computer. I know those things now. (Rita)

You are the first person to give me a computer lesson. Since we started with you, I am progressing and I am getting knowledge of the computer because of you. (Ellie)

Yes, I have. It is not the same like the time I have started. I am now progressing and improving. (Clare)

Rita and Ellie also expressed their concerns and wished to continue the lessons:

Are you continuing teaching us or will you stop? (Rita)

Will you leave us? Will you continue with us until time …? I thank you for helping us. (Ellie)

Discussion and Conclusion

The computer was successfully used as an educational tool in an adult refugee program with the objective of improving participants' English language and computer literacy skills. Good working relationships were established among the participants, centre staff and teacher. The refugees increased their knowledge and skills to enhance settlement by making use of the resources offered by the program. The Internet provided authentic materials, which helped the participants' language learning and computer literacy skills improve. It offered a more learner-centred medium of instruction, which complimented the classroom-based activities. Web-based games, in particular, facilitated language learning and acquisition of basic computer skills. The games provided the participants with interesting and entertaining challenges and motivated them to learn. The selected CALL activities increased participation of shy and/or physically challenged Sudanese women refugees with limited or no schooling in subordinate positions. This group of adult learners felt excited about using the computer and was very eager to learn with the immediate relevance to their personal lives and circumstances. They were actively engaged in the online activities that they could relate to the purpose of learning.

The study has limitations in the small number of participants and the difficulty of controlling variables in the implementation of the community program. However, it was very impressive to see the improvement of the computer literacy skills that the refugees acquired in a short period of time. The results of the study indicate that all participants enjoyed using the computer for learning English, and they felt very positive about using the computer through the program. They agreed that their English language skills have improved and they wanted to learn more to pave the path to better acculturation, social adaptation and resettlement in Australia. The adult Sudanese refugees tried to overcome the language and computer barriers caused by their limited education and learning experiences. The main teaching strategies of repetition, CLIL and CALL were meaningful to them and could bring up the possibility of linking computer-based activities further with communicative situations that they will be most likely to encounter (e.g., writing a curriculum vitae to seek a job). By improving English language and computer literacy skills, future opportunities have been created and confidence and dignity have been restored. The participants found the learning activities very useful and helpful and their responses to the interview questions supported the importance of the technology-enhanced training program. A comment from a centre staff member summarises the value of the work: "The ladies that you have been working with have enjoyed their lessons very much. They surely benefited from this experience." It seems clear that the use of the computer could be well considered in adult refugee programs to enhance language and literacy skills of new arrivals such as these Sudanese women.

Note

Acknowledgements

References

Alessi, S. M., & Trollip, S. R. (1991). *Computer-based instruction: Methods and development* (2nd ed.). Englewood Cliffs, NJ: Prentice Hall.

Australian Bureau of Statistics. (2007). 'National statistics Australia's population'. Retrieved May 1, 2009, from http://www.abs.gov.au/

Australian Bureau of Statistics. (2008). '1301.0 - Year Book Australia'. Retrieved May 1, 2009, from http://www.abs.gov.au/AUSSTATS/abs@.nsf/0/57AF1259CBCDBEE8CA2573D20010A7D2?opend ocument

Brown, J., Miller, J., & Mitchell, J. (2006). Interrupted schooling and the acquisition of literacy: Experiences of Sudanese refugees in Victorian secondary schools. *Australian Journal of Language & Literacy, 29*(2), 150-162.

Bruner, J. (n.d.). 'Constructivist theory'. Retrieved May 1, 2009, from http://tip.psychology.org/bruner.html

Cognition & Technology Group at Vanderbilt. (1993). Anchored instruction and situated cognition revisited. *Educational Technology, 33*(3), 52.

Creswell, J. W. (2008). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Upper Saddle River, NJ: Merrill.

Hatoss, A., & Sheely, T. (2009). Language maintenance and identity among Sudanese-Australian refugee-background youth. *Journal of Multilingual & Multicultural Development, 30*(2), 127-144.

Janse van Rensburg, H. M. (1999). *Toepassingsmoontlikhede van rekenaargesteunde onderwys met milieubenadeelde leerders in wiskunde in die senior primêre fase.* [Application possibilities for computer aided education regarding milieu deprived learners in mathematics in the senior primary phase]. Unpublished doctoral dissertation, University of Pretoria, Pretoria.

Ke, F. (2008). Computer games application within alternative classroom goal structures: Cognitive, metacognitive, and effective evaluation. *Educational Technology Research & Development, 56*(5/6), 539-556.

Knowles, M. S. (1980). *The modern practice of adult education: From pedagogy to andragogy* (Revised and updated ed.). Chicago: Follett Publishing Company.

Knowles, M. S. (1984). *Andragogy in action* (1st ed.). San Francisco: Jossey-Bass.

Lorenzo, F. (2007). An analytical framework of language integration in L2 content-based courses: The European dimension. *Language and Education, 21*(6), 502-514.

Menkhaus, K., & Prendergast, J. (1999). Conflict and Crisis in the Greater Horn of Africa. *Current History, 98*(628), 213-213.

Mitchell, J., Kaplan, I., & Crowe, L. (2007). Two cultures: One life. *Community Development Journal, 42*(3), 282-298.

Murray, D. E. (2005). Technologies for second language literacy. *Annual Review of Applied Linguistics, 25*, 188-201.

Schweitzer, R., Melville, F., Steel, Z., & Lacherez, P. (2006). Trauma, post-migration living difficulties, and social support as predictors of psychological adjustment in resettled Sudanese refugees. *Australian & New Zealand Journal of Psychiatry, 40*(2), 179-187.

Son, J.-B. (2007). Learner experience in Web-based language learning. *Computer Assisted Language Learning, 20*(1), 21-36.

Sonderegger, R., Barrett, P. M., & Creed, P. A. (2004). Patterns of cultural adjustment among young migrants to Australia. *Journal of Child and Family Studies, 13*(3).

Sotillo, S. M. (2000). Discourse functions and syntactic complexity in synchronous and asynchronous communication. *Language Learning & Technology, 4*(1), 82. Retrieved May 1, 2009, from http://llt.msu.edu/vol4num1/sotillo/default.html

Tandon, A. (2004). 'Eyewitness look inside a Sudan refugee camp'. Retrieved May 1, 2009, from http://www.worldvision.org/worldvision/appeals.nsf/stable/sudan_eyewitness_report

Urwiler, R., & Frolick, M. (2008). The IT value hierarchy: Using Maslow's hierarchy of needs as a metaphor for gauging the maturity level of information technology use within competitive organizations. *Information Systems Management, 25*(1), 83-88.

Warschauer, H., Shetzer, H., & Meloni, C. (2000). *Internet for English teaching*. Alexandria, VA: TESOL.