

COMPUTER LITERACY FOR SOCIALLY EXCLUDED UNEMPLOYED WOMEN: EVIDENCE FROM CYPRUS

Despo Ktoridou
University of Nicosia

Nikleia Eteocleous
Frederick University
Cyprus

Abstract

This research paper investigates how a group of nine socially excluded unemployed women with no or low computer literacy skills develop computer literacy knowledge and skills at a later stage of their lives. The study is based on the European Commission's EQUAL program Equal opportunities - Reconciling family and professional life - New Routes for woman program (2006) in Cyprus. The results of the study contribute to identify instructional strategies, methodologies, learning tools, and planning elements that need to be considered in ICT literacy programs for women learners.

Introduction — Literature Review

In recent years we have experienced computer technology expansion in our daily life activities. The society we live in has often been described as the “Information Society” because its infrastructure can be essentially founded on Information Technology (IT), computers and electronic communication systems (Goddard, 2002; Honey, 2001; Polonoli, 2001). As a result of the invasion of Information and Communications Technology (ICT) in society, new forms of work, communication and economic growth have emerged in what is today a global society (Eteokleous, 2008a; Hadjithoma, & Eteokleous, 2007). The last decade of the 20th century gave a more elegant way of defining computer literacy, this being “the ability to achieve desired outcomes via a computer” (Saadi, 2007). Even though the tasks involving computer literacy vary in different environments for elder users, computer literacy can be defined as a general understanding of basic computing principles, knowledge of at least one computer operating system, and proficiency with specific software programs (Saadi, 2007).

ICT is an important aspect of employability, it is related to the economic needs of the 21st century, and it is a requirement to enter the workforce (Eteokleous, 2008a; Hadjithoma, & Eteokleous, 2007). In other words, it is a necessary life skill for survival and access to society. Two important characteristics of a successful employee in 21st century are job skills and computer literacy. Computer literacy has been promoted as an important tool in ensuring that women are included in the development of the information society.

Throughout much of the developing world, the number of unemployed women is dramatically increasing. One of the reasons is the lack of computer skills in relation to the requirement of computer literacy for almost any job.

ICT also removes time and space constraints, increases flexibility and accessibility to education and knowledge. Knowledge increasingly defines the line between wealth and poverty, between capability and powerlessness and between human fulfillment and frustration. A country able to mobilize and diffuse knowledge can rapidly raise its level of development, help all its citizens to grow and flourish and take its proper place on the 21st century global stage (Eteokleous, 2008b).

Numerous projects provide computer training to women. The Bayanloco Community Learning Center trains women in rural Nigeria to use information technology for peace and poverty alleviation. Through the center's services, women have access to computer training, health information, and a microcredit program (PLWHA, 2007). Indira Soochna Shakti is an ambitious project led mostly by the state government of Chhattisgarh to empower an entire generation of a quarter million school girls in all 1,605 government high schools by providing four years of high school IT education, for free (CHOICES, 2002). Another program, Tel-Nek, aims to equip rural and semi-rural women in the Bangalore district with vocational IT skills (Tel-Nek, 2008).

Training often leads to job opportunities for these women. The Datamation Foundation, a leading IT services firm in India, is partnering with several women's groups in an effort to create IT job opportunities for women from disadvantaged social and economic backgrounds. One of its first partners, Nari Raksha Samiti in 2003 has established a computer training center focusing on underprivileged, abused, and destitute women in the Delhi region. Through the center, an online complaint system for solving dowry and family dispute issues has also been established (Samiti, 2003). Digital Divide Data a non-profit IT company since 2001, hires and trains women to provide data entry services for US companies and organizations from its facility in Phnom Penh, Cambodia (DDD, 2001).

For the increasing number of unemployed women with low literacy skills, it is revealed that computer literacy is an essential requirement for their employment. The need to offer this 40-hour beginners course to socially excluded unemployed Cypriot women with low computer literacy skills was obvious after several months of consultations at the Cyprus governmental unemployment's office.

This case study was based on the European Commission's EQUAL program Equal opportunities - Reconciling family and professional life - New Routes for woman program (2006) in Cyprus. The aim of the Program, was

the combination of family and professional life, the decline of the professional segregation based on gender, the promotion of mechanisms for the integration of the principle of equality in the professional field and the encouragement of women employment, the promotion of women in high ranking positions of the

professional hierarchy, the promotion of measures and good practices of equal opportunities in businesses, the formation of a framework and of a substantial content for a social dialogue for the promotion of measures and practices of promoting equal chances in labor and career, the creation of the preconditions for the fight against the causes that raise and reproduce the phenomenon of the segregation of the labor market, the overthrow of stereotypes, perceptions, positions and attitudes in labor work, in relation to the equality between the two gender and the promotion of women employment and self employment. (ECDB, EQUAL, 2006, p. 2).

A group of nine socially excluded women with low computer literacy is the case of investigation for this paper. What really intrigued the researchers was the enthusiasm, motivation and willingness of these women to learn and be employed since through this program they were given a lifetime opportunity to overthrow the stereotypes perceptions, positions and attitudes in labor work and in relation to the equality between the two genders. Therefore, it is extremely important identify which instructional strategies must be followed so as to meet their needs; how do these women learn; did they gain the necessary computer skills so as to be able to be employed? How do they feel about learning at this a stage of their lives?

The purpose of this case study is to evaluate the effectiveness of a 40-hour computer course for beginners to a group of socially excluded women learners with low computer literacy skills. The study focuses on nine unemployed women (some of them unemployed for over a year), over 40 years old with no or minimum computer literacy. The objectives of the study are the following:

- to examine women-learners experiences and specifically, the difficulties and challenges faced throughout the computer course;
- to identify participants perceptions regarding technology given the fact that they have no/minimum computer literacy;
- to identify instructional strategies, methodologies and learning tools that best apply with adult women with poor academic background, in order to gain computer literacy skills; and
- to identify the degree to which they were helped by the computer course in becoming computer literate and also employable.

Research Methodology

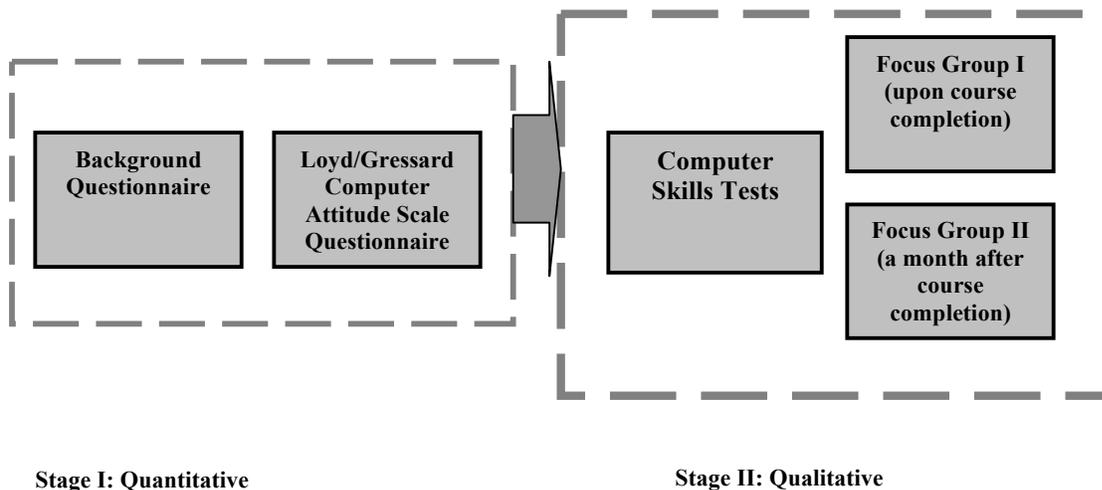
To address the above a qualitative methodology was employed making use mainly of qualitative data (Creswell, 1996). Quantitative data was also collected, however not aiming to generalize the results of the student rather than to measure participants' knowledge and skills.

Research Design

The quantitative aspect of the study was addressed through a background questionnaire examining biographical status of the group, followed by the computer attitude scale questionnaire (Loyd/Gressard Computer Attitude Scale) (Loyd & Gressard, 1984; Loyd & Loyd, 1985) aiming to identify the participants' perceptions on computer literacy and finally upon completion of the course the Computer Skills Tests aiming to evaluate the knowledge and skills on the different modules gained.

The qualitative component was addressed through two focus groups conducted upon course completion and a month after course completion. Qualitative research is an inductive approach that helped the researchers gain a better and deeper understanding of individual's and/of group's experience. Qualitative research is naturalistic (Royse, 1999); the researchers knew what to ask the women students and had the flexibility to change their line of questioning depending on each participant response by using inductive reasoning — begun from observed data collected thorough the classes and developed a generalization which explains the relationship between the learning attitudes observed (Schriver, 2001). The computer literacy 40-hour course as well as the data collection process took place in May – June 2007. The model used for the research is shown on Figure 1.

Figure 1: Research model



The Research Process

The research was divided into two stages. During stage one which took place during the first week of the course, some basic biographical information was collected from participants. The Loyd/Gressard Computer Attitude Scale questionnaire (Loyd & Gressard, 1984; Loyd & Loyd, 1985) was given to the participants in order to identify their perceptions on computer literacy. Specifically, this questionnaire is a Likert-type instrument consisting of 40 items which present positively and negatively worded statements of attitudes toward computers. Women checked whether they strongly agreed,

slightly agreed, slightly disagreed, or strongly disagreed with each statement. The items were coded so that the higher the score, the more positive the attitude. The maximum score for the Computer Attitude Scale is 160. These 40 questions are divided into four categories of ten questions each: computer anxiety, computer confidence, computer liking, and computer usefulness (Farkas & Murthy, 2005).

The second stage, which took place after the completion of the course, consisted of two parts; the first one was a series of tests that were followed by two focus group discussions. Regarding the first part, participants were given five different tests (each consisting of 15 questions) on the various parts of the course, namely, Basic Computer Skills, Word Processing Skills, E-mail/Internet Skills, Spreadsheets Skills, and Presentation Graphics Skills. These 15 questions have a consistent structure aiming to reveal the skills on the specific part of the course that were acquired by the participants.

The second part consisted of Focus Group I (upon course completion) and Focus Group II (a month after course completion) that aimed in obtaining in-depth information on concepts, perceptions and ideas of the group on computer literacy. During the focus groups women had the chance to further explain their ideas and opinions as well as discuss and comment on their peers' answers. The discussions were recorded while the researchers had identified common topics. Both researchers were present so as to question and discuss with the participants on all aspects of the study. The qualitative data and data collected from the quantitative element method were coded and categorized based on the themes emerged, always according to the research objectives of the current study.

Data Analysis

Basic Background Information

From the biographical data collected during the first stage of the research four of the women fall within the 41–50 group of age, with two of them married, and one divorced. Three women aged from 21 to 30 were single and the age of the remaining was 31–40; one was single and the other one married. All four married women and the divorced one had children of elementary and high school age. As far as the educational background is concerned, seven of the women were high school graduates, except two of them that hold a college diploma. It was interesting to note that all women were unemployed looking for a job for the interval between two months to three years. Six of them did not own a computer, while those three who owned a PC did not use it frequently even though they revealed to be quite interested in using it to browse the Internet as a source of information, and those with children to help their children with their homework. Mainly the most common reasons for not using them frequently were the following: lack of computer skills, lack of time and low level of English language skills. Their answers revealed a certain low self-confidence and a fear of failure towards technology though expressing a strong will to learn.

Women's Computer Attitude

The Loyd/Gressard scale questionnaires were given to the participants in order to measure women's computer attitude. The test is separated into the following subscales: computer anxiety, computer confidence, computer liking, and computer usefulness with a total possible score of 40. Referring to the first subscale of the test "Anxiety" all women seemed to: understand the significance of computer literacy, have no fear towards computers, like to start working with computers in their everyday lives, be ready to face challenges in solving problems with computers. "Confidence", the second subscale of the course, proved considerable as half of the women strongly agreed that working with computers would be enjoyable and stimulating and the other half slightly agreed while at the same time seven out of nine strongly agreed on the following statements: "Learning about computers is worthwhile", "I am sure I could do work with computers" and "Figuring out computer problems does not appeal to me". Regarding the "Computer Liking", seven out of nine felt comfortable with the computer and believed that they could easily learn computer use. Half of the women disagreed that knowing how to work with computers will increase their job possibilities. The views were divided half in regards to the last subscale "Usefulness", specifically for the following statements: "I would feel comfortable working with a computer", "If a problem is left unsolved in a computer class, I would continue to think about it afterward", "I have a lot of self-confidence when it comes to working with computers" while seven out of nine stated to feel no confusion or uncomfortable and enjoy talking with others about computers.

Computer Skills Tests

The computer skills tests aimed to evaluate the women's knowledge and skills developed by the completion of the course in the following areas: Basic Computer Skills, Word Processing Skills, E-mail/Internet Skills, Spreadsheets Skills, and Presentation Graphics Skills. Figure 2a (Computer Skills Tests) shows that 85% of the group have developed skills in all modules and only 12% of them were not sure about gained skills. In Figure 2b (Computer Skills Comparisons) it is evident that women have developed skills in all five modules; specifically, women consider themselves competent in working with MS Windows, MS Word, MS PowerPoint, MS Excel and Internet/E-mail. Since women claimed to have no and/or limited computer skills when first attending the course their progress was apparent.

Figure 2a:
Computer Skills Tests

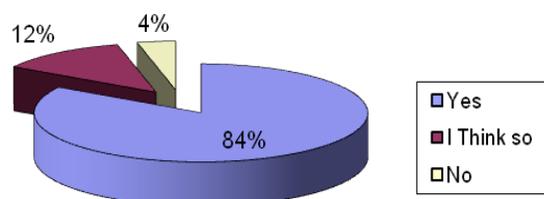
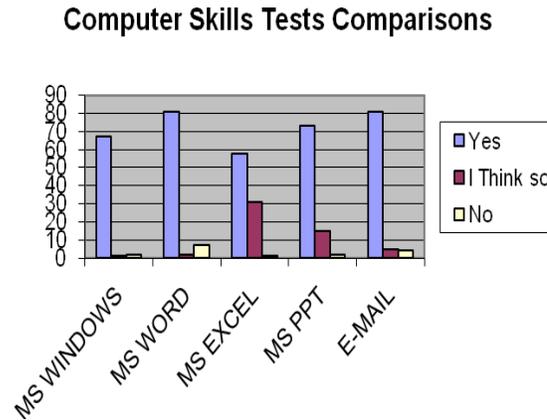


Figure 2b:



Focus Group Sessions

The two focus group sessions as mentioned above, Focus Group I (upon course completion) and Focus Group II (a month after course completion) targeted in giving women the opportunity to share their learning experiences: perceptions on computer literacy based on personal/educational background factors, challenges faced prior, during and after computer course, instructor's degree of involvement to help them overcome these challenges. The data collected from both sessions were recorded and summarized by the researchers.

Focus Group I. This session was very revealing because it gave women the opportunity to share and discuss their learning experiences. The experiences gained through the course were positive in comparison with the results of the Computer attitude scale in regards of computer liking, anxiety, and confidence that the ratings were low. It is revealed that overcame their fears, felt more comfortable in operating the computer, increased their self esteem (they are able to "catch up" on technology), those women with children stated that they feel they have the skills to help their children with their computer homework. In addition, they argued that gaining Internet and e-mail skills helped them to be up to date with world's latest news and finally a woman shared her excitement in finally having the chance to do some Internet shopping. A comment that is interesting to note is that seven out of nine participants argued that they spent a lot of time on the computer either because they are still slow in finding the tools or because they are challenged to "search" and learn new things.

A vital issue for married women and especially those with children (the majority 7 out of 9) were lack of time to come to the course, do the homework and practice, factors that led them to find the pace of the course too fast, aspect that challenged them in memorizing and acquiring the learning material. While sharing these feelings women gave valuable recommendations on ways to facilitate the process in relation to the course itself as well as the instructor. Such recommendations were: extend course duration; more hands-on experience; a more introductory textbook; preferences on lecturer's tailor-made notes and

exercises; collaborative learning/group work; future course repetition. Views on difficulties being faced during the course varied: getting started to work with the mouse-found the device difficult to use, complexity in saving a file especially in different locations; time consuming in typing as well as formatting a document in MS word; in excel the selection of the correct function intrigued women learners;

Focus Group II: One month after completion of the course women were invited for a second focus group session aiming to examine in which extend they have applied what they acquired from the course. Six out of nine women participated and seemed confident with computer-gained skills and stated that they have been utilizing the computer in their everyday lives. They all agreed that they wanted a course repetition with some add-ons and further learning. Finally, two of them reported helping their husbands in the small family business they owned as secretaries mainly using word processing and the Internet.

Conclusions and Recommendations

The aim of the EQUAL program was to offer an introductory computer literacy skills course to a group of socially excluded unemployed women with no and/or low literacy skills to assist them get employed. The study evaluated the effectiveness of the course offered based on a number of parameters in an attempt to identify instructional strategies that best apply with adult women with poor academic background, in order to gain computer literacy skills as well as the degree to which they were helped by the computer course in becoming computer literate and also employable.

Despite the low literacy skills of these women learners and the difficulties faced many things were learned regarding the teaching and learning processes. Based on the computer skills tests results the women have shown improvements of the knowledge and skills in all five modules of the course. The women stated that they are equipped with the basic skills to operate a computer such as: operate the mouse, work with files, create simple documents using MS word, use of basic excel tasks, develop simple PowerPoint presentations, search/browse the Internet send, receive, reply and forward e-mail messages.

Feedback provided from the discussion groups highlighted several significant factors that can influence the teaching process. The factor lack of time to accomplish homework that was of major importance for all women could be solved with an increase of: the length of the course, class time and additional lab hours throughout the week. Learning material should be repeated several times until acquired by the group, with more tailor-made hands-on exercises. The teaching material must be based on instructor's notes in a combination with a simple introductory text book with capture screens so as to meet the needs of this type of audience.

Instructors for such courses must consider and incorporate these strategies to meet learners' needs.

Women have expressed positive feelings towards the course. They have shown increased self-confidence in becoming computer literate for employment that required computer skills. In addition the course proved to be helpful in applying the acquired computer skills not only for their personal development but also for helping their children with their homework.

The EQUAL program as mentioned above targeted to provide women with low literacy skills the basic computer skills for employment and personal development. The interest and the willingness to learn and the self-confidence for a job or for a better job revealed the need for more of such programs that could be highly beneficial also to unemployed men as well as older learners with low literacy skills. Such courses can considerably improve literacy skills and self esteem offering at the same time enjoyment in the everyday life.

References

- CHOICES. (2002). *Indira Sookhna Shakti*. Retrieved January 5, 2010, from <http://iss.nic.in/content/vision.htm>
- Creswell, J. W. (1996). *Qualitative inquiry and research design. Choosing among five traditions*. Thousand Oaks, CA: Sage.
- Digital Divide Data. (2001). *Training at DDD*. Retrieved January 10, 2010, from <http://www.digitaldividedata.org>
- Eteokleous, N. (2008a). Evaluating computer technology integration in a centralized educational system. *Computers and Education Journal*, 51(2), 669–686.
- Eteokleous, N. (2008b). Develop global-multicultural citizens in today's interconnected world: Let's get to know and collaborate with each other. *Proceedings of the ED-MEDIA 2008, World Conference on Educational Multimedia, Hypermedia and Telecommunications*, Vienna.
- European Commission, Employment and Social Affairs, EQUAL Common Database. (2006). *New Routes for Women, Cyprus*. Retrieved February 3, 2009, from <https://webgate.ec.europa.eu/equal/jsp/dpComplete.jsp?cip=CY&national=2>
- Farkas, D., & Murthy, N. (2005). Attitudes towards computers, the introductory course and recruiting new majors: Preliminary results. In P. Romero, J. Good, E. Acosta Chaparro, & S. Bryant (Eds.), *Proc. PPIG 17* (pp. 268–277). Retrieved February 2, 2010, from <http://www.ppig.org/papers/17th-farkas.pdf>
- Goddard, M. (2002). What do we do with these computers? Reflections on technology in the classroom. *Journal of Research on Technology in Education*, 35(1), 19–26.
- Hadjithoma, C., & Eteokleous, N. (2007). ICT in Primary schools: Explaining the integration in relation to the context. *Mediterranean Journal of Educational Studies*, 12(1), 1–25.
- Honey, M. (2001, July 25). *Testimony and statement for the record of Margaret Honey*. Educational Development Center, Inc. Retrieved January 31, 2003, from <http://www.edc.org/spotlight/Tech/mhtestimony.htm>
- Krathwohl, R. D. (1997). *Methods of educational and social science research: An integrated approach* (2nd ed.). New York: Longman.

- Loyd, B. H., & Gressard, C. P. (1984). Reliability and factorial validity of computer attitude scale. *Educational and Psychological Measurement*, 44(2), 501–505.
- Loyd, B. H., & Loyd, D. E. (1985). The reliability and validity of an instrument for the assessment of computer attitudes. *Educational and Psychological Measurement*, 45(4), 903–908.
- Polonoli, E. K. (2001). Integrating technology into classroom: Three questions concerned principals must ask. *Principal Leadership*, 2(4), 34–38.
- Royse, D. (1999). *Research methods in social work* (3rd ed.). Chicago: Nelson-Hall.
- Saadi, M. L. K. (2007). *View from Bangladesh: The new literacy*. Retrieved January 5, 2010, from http://www.acm.org/ubiquity/views/m_saadi_1.html
- Samiti N. R. (2003). *Computer Training Program*. Retrieved January 6, 2010, from: <http://www.narirakshasamiti.com/home.htm>
- Schrivver, J. M. (2001). *Human behavior in the social environment: Shifting paradigms in essential knowledge for social work practice* (3rd ed.). Boston: Allyn & Bacon
- Tel-Nek. (2008). *FOCAD stands for Fondo de Cooperacin al Desarrollo – Development Aid Fund*. Retrieved January 6, 2010, from <http://www.teknogune.net/ihtml/princip.htm>