

Projeto Crisálida (Chrysalis Project) : participatory interdisciplinary educational proposal for intervention in the female prison system of southern Brazil.

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ABSTRACT

This article describes an interdisciplinary research project for intervention in the rehabilitation of women inmates in Brazil. The study proposes an educational program in the use of digital technologies as a pathway for women inmates to find meaningful work and rejoin society. The use of technology is seen as a factor that minimizes social exclusion through the development of an educational program of technological teaching and of preparation for work. The program generates a proposal inspired by Activity Theory and Participatory Design. The project includes the construction of a software specific for the prison clientele, according to a methodology based on a participatory approach and gender focus.

Keywords

Education, technological literacy, interdisciplinary, software, gender, activity, participatory design,

INTRODUCTION

This article presents an interdisciplinary research proposal called *Projeto Crisálida*, directed towards the development and application of social technology. The study presented here refers specifically to an educational intervention in the rehabilitation system of the Female Presidium in the city of Florianópolis in Brazil and has generated two doctorate studies currently in progress.

The research named *Projeto Crisálida* is composed by two studies proposed and constructed in an interdisciplinary perspective. The project has both a pedagogical strand and, a software development strand. They are:

- *Study I* is an educational initiative for the creation and development of a pedagogical program of digital literacy that seeks to increase inmates' opportunities for

employment when they leave jail.

- *Study II* aims to build, to develop and to apply a computational technology for the development of a prototype of educational software, centered on the user, following insights of gender.

GENERAL OBJECTIVE

Creation of a program of technological literacy following social constructivist learning approaches and construction of a software according to insights of HCI as an attempt to minimize inmates' social exclusion.

SPECIFIC OBJECTIVES

The interdisciplinary nature of *Projeto Crisálida* distinguishes objectives that are related to the three main focuses shared by the two studies mentioned:

Digital Literacy Program

To build a digital literacy program as a mediating tool to social exclusion that culminates in opportunities for continued education, work in jail, and employment after incarceration.

To analyze the processes of computer tools appropriation observable during the development of the Digital Literacy Program that has been developed in a Movable Computing Lab.

Construction of Tools

To develop an educational software having as basic characteristics collaborative learning, participatory control and security strategies for use that is appropriate to the context of the target clientele.

To include insights about the influence of gender in the process of developing interfaces for softwares from the angle of the feminine public.

To create a model of ideological policy for the use of the Internet in environments where security and control of traffic information are strategic, e.g. for application in educational programs in a prison.

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- **Perspectives in the Gender Approach**

Following a pedagogical strand (the Digital Literacy Program), gender is seen in the perspective of improving women's position and equity without radically altering the existing structure of gender relations. From this point of view, a woman is empowered when she is literate, educated has productive skills, aware of the need of developing computer skills. Self-confidence, access to work, autonomy and citizenship would be possible outcomes of women's empowerment.

According to a technological strand (software) a gender perspective is raised based on neurological research [13] that refers to differences in women's appropriation of tools when compared to men and HCI insights about the empowerment of women through the Internet [2].

The aim of this study is to underline and include women's characteristics in the process of developing a guideline as an orienting device to be applied in the creation of specific projects to be designed for women, e.g. educational programs, e-commerce directed to women, creation of shells to personalize software interfaces (color, metaphors, functional preferences, etc.).

PROFILE OF THE TARGET CLIENTELE

UNESCO [15] makes specific reports available on the profile of the female prison system in Latin America from a perspective of basic education and gender. The aspects referring to our country, Brazil, are sparsely cited in the reports. In the USA there are documents that show the American prison universe clearly and extensively, but the American reality cannot serve as a model for the study of Brazilian reality for multiple contextual reasons. The reality of each country has its own peculiarities, for example, in Latin America the aspects that generate exclusion are similar (poverty and illiteracy), but the political and social conditions are different.

The information available regarding the Brazilian prison context is usually the result of institutional research that reports on conditions in Brazilian prisons from a human rights perspective. In this kind of research the female prison universe is usually confused with the male universe – the questions of gender and the specific characteristics of each segment are not revealed completely in the majority of the reports on the research. Individual difficulties in the context of the Brazilian prison system are revealed in many different ways. For example, the level of schooling of the prison population is generally low. The Research of the Latin American Institute of the United Nations – ILANUD 2000 [7] indicates that 44% of the prison population had no defined profession prior to their imprisonment and 42% were unemployed and made functionally literate (60% of the inmates did not complete elementary school). The existence

of intellectual emptiness is evident – it is not enough to teach prison inmates to read and write.

Such factors contribute to the lack of opportunities and the ability to compete in the labor market. Unemployment, lack of professional preparation, the nonexistence of life projects and the impossibility of providing for him/herself, are some of the main roads that lead to criminality.

Work usually keeps the prisoners away from criminal organizations, and education that aims at the preparation for work is a factor of extreme relevance for their social reintegration. It is necessary to stress variants, concerning the psychosocial aspects and those of a judicial nature, that directly influence the quality of actions that are conducive to prison rehabilitation and the institutional conditions of the Brazilian prison system.

In spite of many financial, social and political problems in designing programs of adult education for prison inmates, there are relevant proposals being held in our country. Most of them are concerned with education literacy. Technological literacy programs are sparsely offered to women inmates in the Brazilian prison system. Aiming to equate gender issues in technology design and social exclusion we decided to invite, as participants of the research, a group of women inmates incarcerated in the presidium of the State of Santa Catarina located in Florianópolis City, Brazil.

Profile of Subjects of Interdisciplinary Study

The 40 inmates of the Female Presidium of Florianópolis, from 20 to 40 years of age, constitute the subjects of this research. According to the report of the Department of Penitentiary Administration of Santa Catarina, 5% of those convicted were sentenced to over 20 years of prison. Drug dealing is the infraction that leads most of them to imprisonment. They have an average of three children, 35% are HIV carriers, 5% are illiterate, 85% completed elementary school. Only 5% of these prisoners have a defined profession; 85% of these clientele participate in the opportunity for work offered by the prison system (making paper bags and assembling leather balls).

JUSTIFICATION

The educational programs in the system of prison rehabilitation are of primary importance for the reconstruction of the autonomy and social identity of the individual, for gaining economic independence, for exercising freedom in a perspective of citizenship and guaranteeing the exercise of human rights.

The opportunity to prepare for the exercise of a profession and to acquire abilities that guarantee a place in the world of labor, are factors that can assure the recuperation of self-esteem, the creation of individual life projects, and the minimization of new crimes and consequently, a better situation of public security. However, there are difficulties in relation to institutional questions that are related to the reality of the educational, political, economic and social

context of the target clientele of this project, such as: a) the fragmentation of actions of rehabilitation that do not link elementary teaching programs to work preparation programs; b) the scarcity of preliminary studies of the prison community, to verify the needs, interests and expectations involved in a participatory approach; c) the absence of educational programs that seek to offer digital inclusion¹ as one of the possible ways to generate income through work, autonomy and minimization of the situation of stigma that affects every ex-prison inmate; d) the extremely small number of job offers to those who leave the prison system due to their lack of professional preparation and to prejudice on the part of society as a whole; e) isolated rehabilitation activities, generally through volunteer actions, without establishing attainable post-prison goals; and f) that building educational programs directed towards digital technology according to a participatory design approach is practically nonexistent in the rehabilitation programs integrated with the prison rehabilitation system in the female presidiums in the state of Santa Catarina, Brazil.

METHODOLOGY

Research is applied according to an action research approach [14] to elaborate the diagnosis and construct the educational project of technological literacy. It has its support in theories of development within cognitive science [10], in concepts elaborated by Activity Theory [1, 4], and it is inspired by a pedagogical line of social interaction [16].

The theoretical lines mentioned above are within the scope of the Digital Literacy Program proposed in this project. First, theorists within the cognitive science field propose that thinking involves the manipulation of internal representations of the external world also identified as mental models. The strategic model of reading proposed in the program is based on this theory. Next, the influence of Vygotsky's principles [16] are relevant to the study, for example connections between development and learning processes, focus upon the role of the individual in his/her social-historic-cultural context, and clarification of the concept of mediation. Finally, activity theory research proposes a structure for analysis of human practice based on the concept of activity in a systemic view, e. g. this study refers to a systemic universe that just may be altered by mediation and transformation - the prison system.

HCI techniques [11] and the application of methods of participatory design [8, 9] are crucial in the process essentially centered on the user for the development of the educational software. This work includes orientation and development of gender insights, in a perspective of power relations [5] and of construction of autonomy [2, 5, 6], in the

¹ *Digital inclusion* means to offer educational conditions to poor, socially excluded people to overcome digital illiteracy, and lack of work opportunities and access to information by means of computational tools.

process of building the educational program and the creation of the educational software as well.

DEVELOPMENT

The *Projeto Crisálida* is identified as a technological literacy program and includes a) the educational intervention program in the female presidium of the city of Florianópolis, State of Santa Catarina, Brazil, known as the *Digital Literacy Program* and b) a computational tool designed following concepts of usability, named the *Educational Software Tool*. Each stage of development of the project was determined from an interdisciplinary and global view of the educational process.

A) Digital Literacy Program Stages

1. Creating Digital Resource Environment - sought to create an environment for the tools available for the phase of digital literacy (digital camera, computer, printer and text processor) developed in a *Movable Computing Lab*.

2. Development of Participatory Project - included the initial practices for the construction of the project in the form of a *Communication Digital Workshop* with the cooperation of participants, in order to define the aims, methods of development and selection of the product to be generated.

3. Communication Workshop - presented reading of texts with general information, guided by a problem-solving approach, from the instrumental viewpoint, with the aim of following some instructional parameters of the activities proposed, reeducating women inmates and including them in uses of digital technology such as: a) providing, in a short space of time, strategies to facilitate reading, which contribute to the minimization of text comprehension problems; b) achieving the goal of constructing a product via digital technology; c) stimulating the development of useful and applicable abilities for their future professional lives; d) generating an environment of cooperation and work to develop the final product; and e) evaluating the process by means of a homepage proposal (under construction) and individual interviews.

B) Educational Software Tool Stages

1. Movable Computing Lab Support. A bus was adapted as a movable laboratory of computing. A printer and 12 computers were installed inside the bus. The idea was to introduce computational skills through the tasks proposed in the Communication Workshop. This stage was designed to capture the women's needs, style and desires when they faced the situation of being introduced to computing skills.

2. Development of the Participatory Design. Literature does not highlight gender issues as a factor to affect technology design. This research was inspired by participatory design methods. Practice was proposed and developed as a way to promote cooperative production between inmates' experiences and abilities and the designer's aim to evaluate usability based on gender issues.

This way, three main steps were followed: a) a needs analysis and analysis of the possibilities to undertake the project; b) evaluation and selection of technological components; and c) inmates' participation in the software design by means of interviews, questionnaires and productive evaluation.

3. Software Construction is currently in progress. After experiencing the digital workshop and analyzing the circumstances of need, context and principles of use, the software construction was devised. The software design follows some principles such as: a) personalizing its characteristics as much as possible, so that it becomes, at the same time, the initial tool for learning how to use the computer and a useful production tool; b) using computer networks to allow for cooperative work as in CSCW design [3]; c) creating an ideological policy for the prison system to access the Internet based on principles of access that do not discourage the user; and d) generating an access coordination provided in a system with specific functions for the administrator of the system, tutors and users and in intelligent software agents to control the security, e.g., search agents, security access agents and content agents.

Commentary

It is important to emphasize that the objectives of this project were delineated with the participation of the community involved. The diagnosis resulted from direct contact with the subjects, through a survey of the needs of the social segment of the excluded. Questionnaires, Interviews, video and audio recording are used as instruments of research. The product to be developed in the workshops and the generating themes were selected collectively and cooperatively.

Needs analysis research shows that financial autonomy that may enable inmates to support the family was one of the most pressing needs. Among other aspects, basic education was seen as necessary; however, a short-term activity to support the family was identified as the highest priority.

Because this research is still in progress, there are issues yet to be accomplished, for example conducting the Work Practice Workshop and creating the educational software.

For the development of the final stages, voluntary participation is expected from the women who participated in the previous stages, to take part in the construction and validation of the software and the educational program proposed.

PERSPECTIVES

It is hoped that this project will stimulate the creation of pedagogical methods (models) applied to educational programs with a social focus that utilizes new technological devices.

Human-computer interaction research is expected to generate subsidies to evaluate the impact of digital technology on the preparation of adults for the work world and their adaptation to the labor market, including women in incarceration. The chief aim is to promote social development through education and digital inclusion.

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