

Free Software and Social Technology in Search of Inclusive Development Models and Use of Technology

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ABSTRACT

This article describes an application of Social Technology based on Free Software through initiatives with members of the students of PROINICIAR Program aimed at training those students whose enrollment at the University is made by the quota system. These students also do not get adequately involved in their schoolwork and tend to care less about their grades. The previous conditions challenge attempts to help students development so they may become more competently skilled and competitive in the labor market.

Keywords: Social Technology, Free software, inclusive development.

1. INTRODUCTION

The state of Rio de Janeiro – Brazil, and in particular its capital, the city of Rio de Janeiro is characterized by the existence of a large poor population who lacks access to higher education.

To overcome this difficulty of access that is causing the lack of training of manpower, the government imposed a quota system for the State University of Rio de Janeiro - UERJ, encouraging black, native Brazilian students and those who attended elementary schools and middle schools of the public educational system.

A new paradigm for the practice of Education is being sought for training students whose enrollment at the University occurs based on quota system. The University of the State of Rio de Janeiro - UERJ in order to meet this new paradigm created the Program of Academic Initiation – PROINICIAR, which aims to assist the students in order to ensure they stay in the University, putting into practice an effective mechanism for reducing social inequality (economic, ethnic, racial, cultural etc.).

Several initiatives have been taken to prevent dropouts, among them the payment of scholarships to the students in the first year of the course vis-à-vis the commitment to

attend extracurricular activities that may enable them to develop a broader view of society.

Since 2003, 10.208 quota students have attended about 50 activities/year offered by PROINICIAR.

In 2008, there have been so far 100 quota students attending Instrumental IT classes targeted at first-year college students with majors in different areas.

The authors used pedagogical practices that dealt concurrently the usual academic training, with professional skills.

This practice was inspired by the fact the students subject of the search come from economic layers that does not allow exclusive dedication to the study activities because they need work to ensure their survival.

This effort achieve the educational aims of the project PROINICIAR that committed to the rescue of a social debt of more than three centuries involving mainly to open opportunities for blacks and Indians, traditionally excluded from the best job opportunities for the lack of qualifications that are based on knowledge.

Being so, this effort to join the university level must be accompanied by concerns and initiatives to bring these people in a labor market more sophisticated and that they provide conditions for survival in the short term.

Statistics that command this discussions point out that people who took this opportunity to enter the world of academic knowledge, 48.0% for them, had been working for their survival at the time of entering the university [2].

In this context, committed to the principles of Technology and Social sustainability on a platform of Free Software, the authors have been developing this project to empower quota students, through experimental workshops, to use IT resources.

It was evidenced that after the first year of attendance and with the end of the scholarship students had to leave the University in order to find a job, ultimately a low wage job for the under qualified.

The project developed by the authors aims to train the student professionally in the use, development and installation of Free Software using the technological resources available in the University.

Professor Basarab Nicolescu advised in his article: The Evolution of the University Trans-disciplinary [3] - Requirement for Sustainable Development that "It is recommended to encourage and develop all technical means available in order to give the required emerging trans-disciplinary education universal dimension and, more broadly, to promote the public domain of information (virtual memory in the world, the information produced by government organizations, as far as the information related to regulations of copy left - GPL-General Public License is concerned)".

2. SOCIAL TECHNOLOGY AND THE FREE SOFTWARE

According to the Social Network of Technology – RTS: "Social Technology comprises products, techniques and / or methodologies, developed in interaction with the community and which represents effective solutions for social transformation" [4].

These elements can-and should-be integrated and used in synergy with each other and with disciplinary knowledge, science, aiming to develop projects that promote social inclusion and create employment and income. We also wanted to give visibility to successful experiences to contribute and influence the shaping of public policies, promoting and articulating the various actors of development through complementary actions and sustainability.

Inspired by the principles of technology and addressing the social aspects of reality under a trans-disciplinary scope, it is fair to say that a general Problematization - the alternative methodology of teaching where problems are extracted from reality through observations made by the students - of reality and the consequent specification and construction of solutions made by students on issues that affect the community is construed with the due respect for and empowerment of the history, culture and local knowledge. It is in this sense that the actions and initiatives of this Project should develop other projects that may contribute to promote an effective social transformation.

3. FREE SOFTWARE AND THE NEED FOR A TRANS-DISCIPLINARY VIEW

The Free Software, either due to the characteristics of the production process, or due to the conditions in which it is distributed and used, is a Social Technology.

The challenge is to integrate the resources and expertise systematically to solve the real problems, which implies a

greater effort to train students, with emphasis on quota students, which is the focus of the Project under view.

Modern scientific methodology, separated in disciplines headed by their very own experts, does not account for the complexity of the content of the humanities and social relations, which are more thermodynamic than mechanical. Subjects cannot be apprehended by any discipline. The methodology of trans-disciplinary research is based on three pillars [3] - (1) ontological - the various and different levels of reality, (2) logic - the logic of the third term included, (3) complexity - multiple and concurrent logics. Working with these three pillars, it searches for a possible integration. There is no fundamental/basic level, there is no hierarchy, each level is characterized by incompleteness. Trans-disciplinarity is globally open. The levels of Reality are inseparable from the levels of perception and the latter form the basis of the verticality that conforms the degrees of trans-disciplinarity. The presupposition of trans-disciplinarity is that which is singular, since its focus is the Subject.

The ongoing interaction between students and the faculty and other actors in real situations, conforming to the trans-disciplinary approach, promotes an improvement of access to information. On the one hand, students in real situations access the knowledge involved in the subjects of study and apply it in a contextualized and trans-disciplinary fashion, considering the opportunity and the restrictions that reality offers for its application. On the other hand, the faculty shall know which aspects of reality, reacting to their representations, demand scientific and specific research, within the realm of the subjects being taught, and which will return to reality to promote new changes in a permanent process of co-creation of knowledge with intervention in reality.

4. THE PROBLEM-BASED LEARNING (PBL)

In PBL approach, the teacher creates interesting, challenging, and authentic problem situations.

Net thinking, as trans-disciplinary thinking, considers the diversity and autonomy of each actor and seeks a logical support for the coexistence of differences. Trans-disciplinarity is the ability to dialogue with various forms of knowledge. The diversity of views by no means prevents social consensus about the world in which we live from happening; it actually enforces it. The perception of emergencies in real environments, thus a trans-disciplinary perception, is the duty of a catalyst agent for initiatives that promote articulation. The agent plays the role of the Subject of transformation, not the role the object of transformation. The agent is required to act upon reality, deepening his/her awareness of reality, so each one and everyone may partake, ultimately the co-authors of the view produced and the pathways to be walked. The construction of knowledge is based on the critical view of the participant to understand and

transform reality. Thus, participation in the modeling of problems includes the individual according to the content of the discussions, therefore preparing him/her for the decision-making process.[5]

5. INSTRUMENTAL WORKSHOPS OF INFORMATION TECHNOLOGY

UERJ Laboratories of Information Technology occupy several floors of the Community Campus and are administered by the Department of Information Technology – DINFO, under the Administration Center of the University.

These labs, in their vast majority, use ThinClient technology linked in a network server where Free Software (Linux, OpenOffice, etc) is installed. Notably, the OpenOffice suite and the Firefox browser are the most widely used software for research and development of scholarly work. Any student or professor at the University may use the laboratories for study and research, providing they identify themselves at the laboratory reception.

Training offered to quota students in the Instrumental Workshops allows them to use computer resources based on a word processor and Internet browsing, however, it does not qualify them as digitally included. In contrast, it gives the false idea that those few commands repeated without further consideration integrates students into a vibrant society and, above all, a technologically based society.

The Project for Instrumental Workshops of Information Technology works in two parts: one deals with the training so the skills developed may be used during the duration of the course in which the student is enrolled, with the OpenOffice suite as the work platform, and a mentor teacher and two trainees of the Initiation in Teaching tutorial activities in 4 (four) classes; the second part is developed from a Web-enabled instruction that attempts to acquire new knowledge and professionalism of the student through the completion of distance learning courses, according to their interest [6](www.cdtc.org.br), there being no limit to the number of courses students may attend.. Web-enabled instruction seems to be an ideal learning environment because students can access an almost unlimited amount of information and apply it in multiple ways [7].

The courses offered range from aspects of the initial installation of Free Software to those that shall qualify students to become network and data security analysts.

Success in online courses often depends on students' abilities to successfully direct their own learning efforts. It is very critical to develop students' regulation of learning before providing online courses to them. This particularly applies to low academic achievers. Students' motivation may benefit from web-enabled instruction with self-regulated learning (SRL) strategies. Successful students in an online course generally used self-regulated

learning strategies, and the effect of the self-regulation variables on students' success was statistically significant [8]. Consequently, SRL was applied in this work to help professional skills allowing students to concentrate on their learning.

These practices can go beyond the initial objectives of PROINICIAR, integrating students to academic life as it stimulates their social and economic development aiming at rescuing citizenship and ethics in social relations so that we can look forward to full democracy, social justice, equality, social solidarity and respect for the environment.

6. CONCLUSIONS

The project, implemented since 2003, has been subsequently refined based on the experiences produced, and has allowed quota students and participants of the instrumental workshops obtain the following results:

- a) Training for the contextualized use of knowledge;
- b) Availability of technological resources at low cost for digital inclusion;
- c) Social appropriation of technological knowledge and methodologies aimed to solve real problems.

7. REFERENCES

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