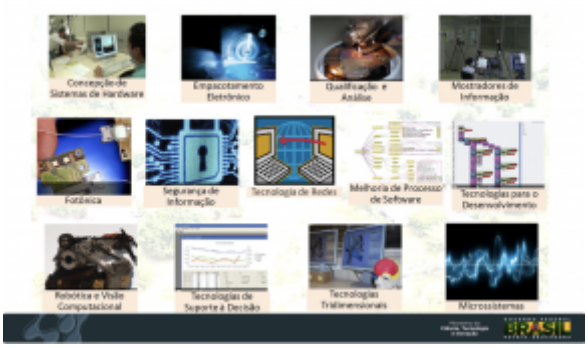
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Information and Communication Technologies for transpersonal and transdisciplinary goals

Presentation of a work in progress in Brazil for peace education



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This report results from a research made in Brazil during the summer of 2015.

Author(s)



After several years spent in consulting, research engineering activities and popular education, **Florent Pasquier** conceives and implements an « integrative, implicative and intentioned pedagogy » (P3i). His current research emphasizes transdisciplinarity, transpersonal psychology and digital humanities, until technontology.



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Outline

About CTI institution in Campinas, Brazil

Motivation for this research starts from the ascertainment of a big use of violence in the world

Could peace education with information and communication technologies for educational purposes (ICTs) be a solution?

Proposition of initial design and project structure to respond to the challenges in five steps

Conclusion

About CTI institution in Campinas, Brazil

This research was conducted in a unit of the ministry of Science, Technology and Innovation (MCTI). This place was created in 1982 in Campinas (San Paolo). It has 150 researchers and 300 employees with multidisciplinary profiles acting on information technology (IT). It has to support Training in Information Technology Foundation (FACTI) with approximately 320 contractors. This place hosts various institutions (CTI, CTI-Tec, IFSP Campinas, FACTI).

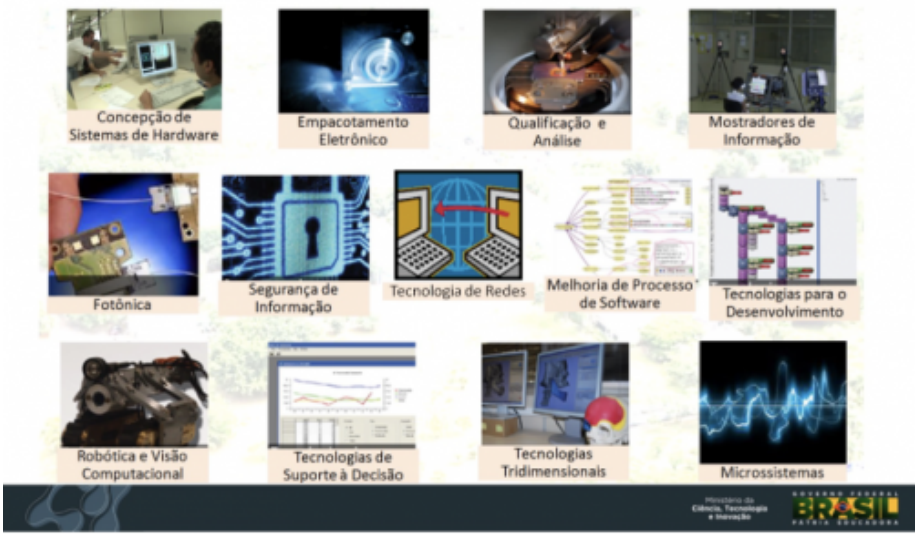


Figure 1. CTI abilities in technical fields

Technologies are growing faster and bigger worldwide, but at the same time the frequency of people in the world dying by starvation in 2001 was of one person every 2.5 seconds (around 85% of these starvation deaths occur in children 5 years of age or younger).

Therefore, giving way to more technology is not an answer to our actual diseases: war, violence, corruption, economic and environmental disasters. With a bad use, it just increases it.

Of course, problems don't occur with technologies themselves. So what would the main cause of those disasters be ? It is the way humans deal with these technologies.

So, shouldn't we pay more attention to a more humanistic approach in our lives as we agree that just technology is not a sustainable way? What we want to do is mixing new technologies and human sciences to develop a transpersonal and transdisciplinary approach in the field of peace education.

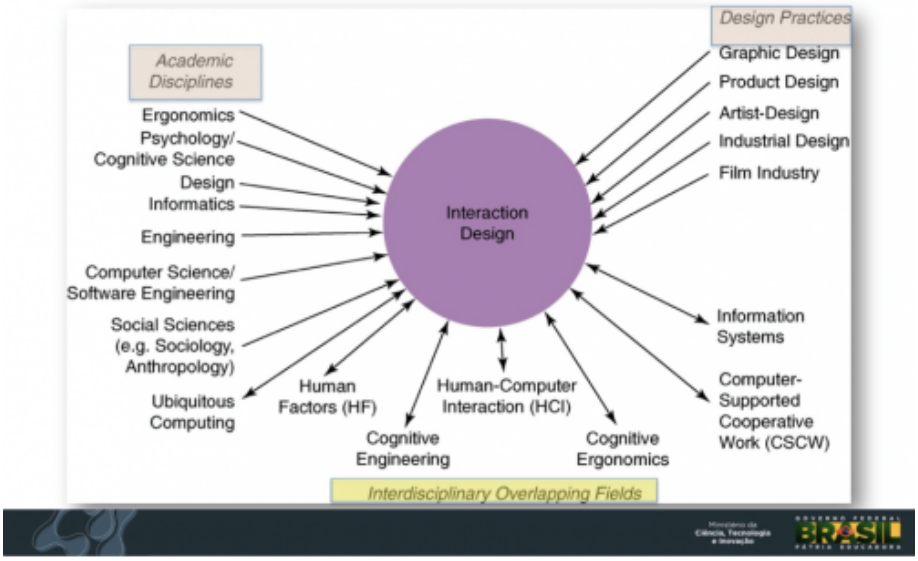


Figure 2. CTI skills in Human Sciences

Motivation for this research starts from the ascertainment of a big use of violence in the world

Specially in Brazil, who stands in the 7th position regarding homicide

cases for the whole population, and 8th for youth (report “Mapa de violência 2014, os joven do Brasil”, Julia Jacobo Waiselfisz).

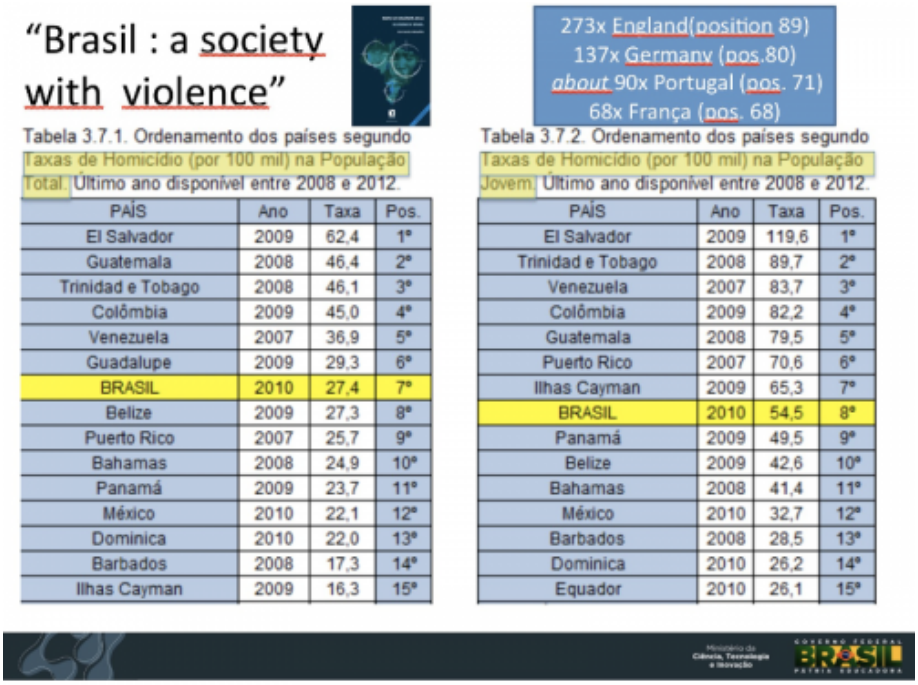
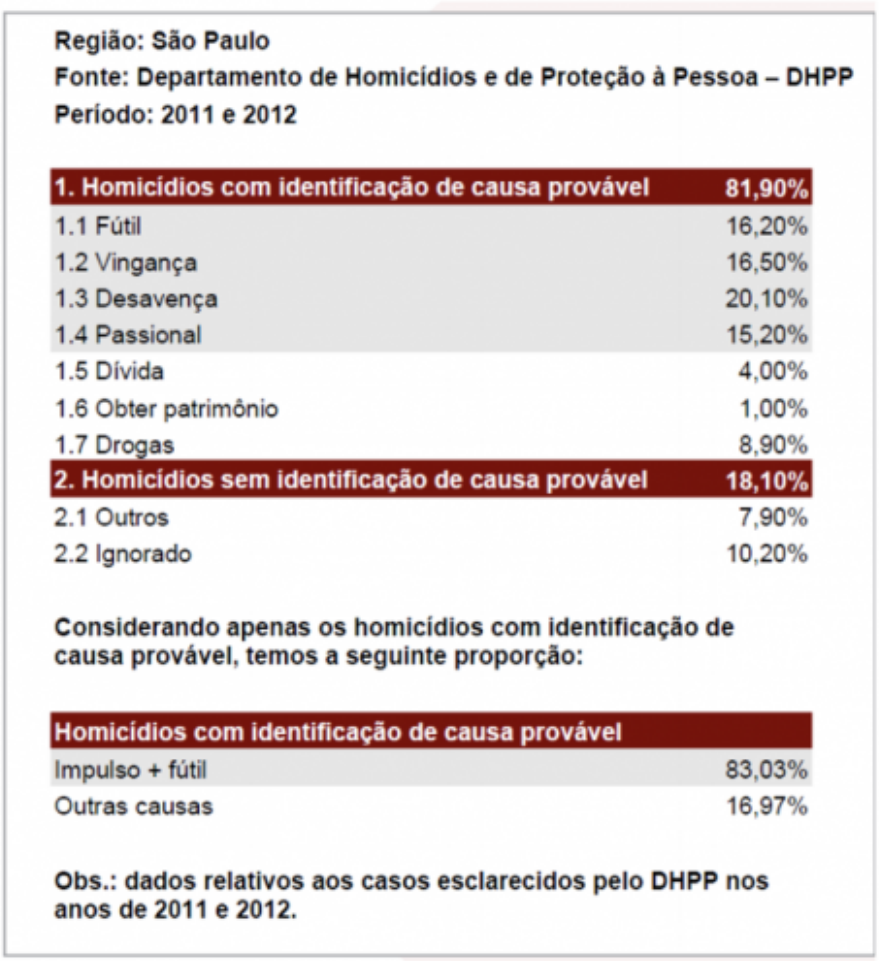


Figure 3. Brazil, a society with violence



Região: São Paulo
Fonte: Departamento de Homicídios e de Proteção à Pessoa – DHPP
Período: 2011 e 2012

1. Homicídios com identificação de causa provável	**81,90%**
1.1 Fútil	16,20%
1.2 Vingança	16,50%
1.3 Desavença	20,10%
1.4 Passional	15,20%
1.5 Dívida	4,00%
1.6 Obter patrimônio	1,00%
1.7 Drogas	8,90%
2. Homicídios sem identificação de causa provável	**18,10%**
2.1 Outros	7,90%
2.2 Ignorado	10,20%

Considerando apenas os homicídios com identificação de causa provável, temos a seguinte proporção:

Homicídios com identificação de causa provável	
Impulso + fútil	83,03%
Outras causas	16,97%

Obs.: dados relativos aos casos esclarecidos pelo DHPP nos anos de 2011 e 2012.

Figure 4. Causes of violence (source : http://www.cnmp.mp.br/portal/images/stories/Noticias/2012/Apresentao2.pdf)

From a human point of view we would like to know if these causes of death could be avoided with a better self-control (via transpersonal and transdisciplinarity approaches in peace education). As 83,03% results from unserious reasons and a lack of control of the murderers. }

Many researchers work on this question: Edgar Morin, Luc Ferry, Pierre Weil, Marc-Alain Descamps, René Barbier, Basarab Nicolescu… That is one of the reasons why we need education to know ourselves better. This supposes an education not based on competition but on cooperation. Meaning, an education which includes a strong culture of peace.

Most of the South American countries have understood it, using a paradigm of holistic or integral education in their schools. We have a true need to develop at large scales peace education, and we need the help of ICT's to do this, for the youngs and adults. It is probably possible to join

both aspects of digital technologies and human awareness in the pursue of peace education for all, and for a better world. But how to do this as we observe that human time is definitively slower than the machines and technologies time?

This is the question and objective of the work we're dealing with, through a goal of a personal and social transformation.

Could peace education with information and communication technologies for educational purposes (ICTs) be a solution?

It could be a learning process that leads the individual to: live in harmony with oneself; with others; with the environment (cf. from Unipaz - Universidade Internacional da Paz-, Pierre Weil's approach in these three steps in interaction).

Our objective is to develop new semantic technologies and human-computer interaction design to promote the sharing of information, of educational contents and allow discussions between actors involved in peace education.

For this, we have to face various technical and educational challenges as below.

Human computer interaction (HCI):

– How to design digital artifacts and systems capable of maximizing the user experience in this context?

– How to use these in integrated artifacts and in collaborative environments?

– How to explore new technologies (eg, multi-modal interfaces) to provide rich interactions to maximize peace education?

– How to explore the technology of social networks to facilitate the exchange of information and the sharing of knowledge between the different actors of peace education?

Web issues semantics (ontologies):

– How to build computational mechanisms, for example using semantic Web technologies to index and retrieve content in order to provide a digital repository of educational assets for peace education?

– How to ensure the integration and semantic interoperability of contents in this context?

– How to represent computationally curricula for peace education and integrate it into an environment that will recover the right contents at the right time?

Learning process:

– How to properly exploit existing technology - and future - considering requirements of education?

– How to integrate existing technology - and future - in a peace education curriculum already existing?

– How to promote the advancement and dissemination (diffusion) of peace education, including the development of common sense and awareness of its importance, with transpersonal and transdisciplinary approaches?

Proposition of initial design and project structure to respond to the challenges in five steps

1- A sharing website: building interactive portal to disseminate existing information, including institutional, associations, people, researchers, teachers and other actors working in peace education field. In this way, identifying and sharing existing and futures websites is an important point for our proposition (fig. 5).



Figure 5. Example of French sharing website for alternatives educations (collaborative directory).

2 - A semantic repository: construct a data warehouse to provide multimedia content access and sharing, learning objects and interactive artifacts (eg, games). This repository should make use of semantic web techniques for information retrieval, to allow participants to reuse the stored content rapidly and efficiently depending their personal and institutional position.

3 - A social network: constitution for the actors in order to share information, questions, knowledge and experience. It should be developed for institutions and individuals (e.g., educators, researchers, learners). It could access to other networks of researchers and professionals (data bases) existing as ResearchGate, Linked-in or Google Scholar (fig. 6).



Figure 6. Example of social media and multimedia tools.

4 – Construction of a curriculum for distance learning of peace education, including how to explore multimedia content, learning objects, case studies and interactive artifacts. It could start from the basic skills and abilities of learners in order to enhance them (by using Bloom's taxonomy based on cognition faculties, as a guide), and provide training diplomas courses in peace education.

5 – Extensions and new technologies (to be created): building advanced interactive artifacts, explore multimodal interfaces to create adaptive artifacts to identify the emotional state and the progression of the learner (sensitive captors: webcam, suits; real-time saliva analysis...). Exploring adaptive games and stories (fig. 7), create integrate and smart devices for peace education.

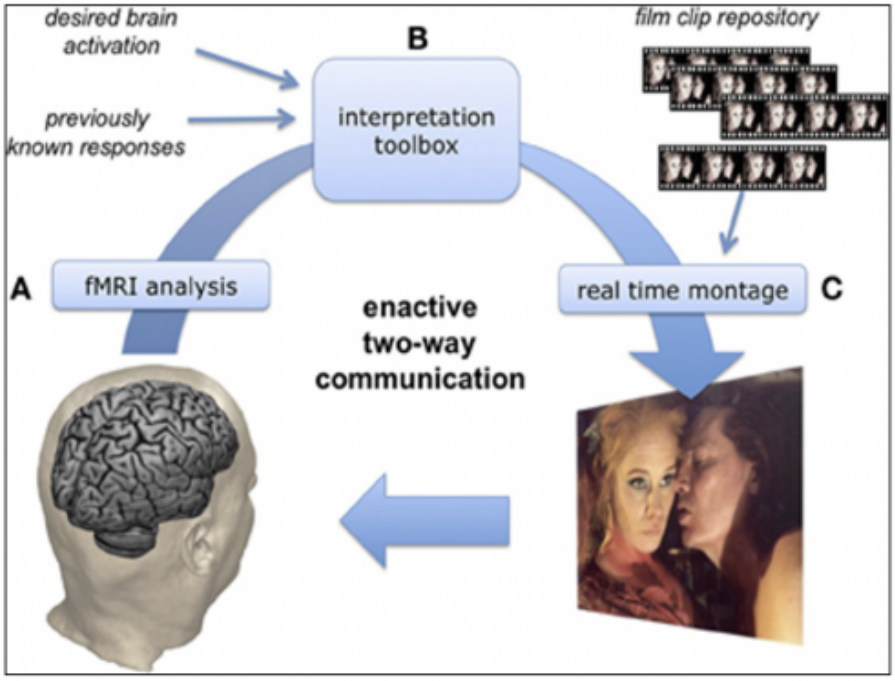


Figure 7. Enactive cinema for social real-time neuroscience (Source : http://www.frontiersin.org/files/Articles/24553/fnhum-06-00298-HTML/image_m/fnhum-06-00298-g001.jpg).

> Diagram of the enactive setting: (A) the viewer's physiological responses are analyzed in real-time, (B) an "interpretation toolbox" compares them with previously known behaviors and selects cinematic elements that are expected to lead toward a desired response, (C) real-time montage produces continuous cinematic stimulus projected back to the participant, whose brain responses are scanned (A), and so on.

Conclusion

Transpersonal and transdisciplinary approaches are interesting basis to build and construct programs in order to enhance peace education using ICTs and social networks. This need to mix knowledge and skills of scientists on one part and practitioners and educators on the other part, as example in Brazil : UNIPAZ (Universidade Internacional da Paz) ; UHI (Universidade Holística Internacional) ; ALUBRAT (Associação Luso-Brasileira de Transpessoal) ; Fundação EUFRATEN ; CLASI (Centro Latino Americano de Saúde Integral) ; NIED/Unicamp University…

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