



Global Reachout Projects in Computing: ESD for students

Dr Lynne Humphries



University of
Sunderland

Dr Lynne Humphries Bradford 10/11 July 2007



Context

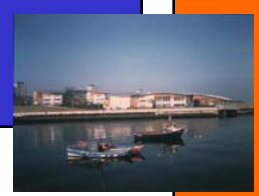


- A pilot group of foreign MSc students studying a research and professional skills module at Sunderland were previously involved as volunteers in a community project to develop material to teach social computing to local novice users (older women)





Sustainable outcomes from the student volunteering activity



- The activity was part of an education for sustainable development curriculum initiative in the ethics part of the MSc research module that all computing students take.
- Findings from the activity were fed back to the main class
- 3 out of 4 of the student volunteers want to do their MSc projects on sustainability issues
- They have seen benefits for themselves personally through their communication with people outside the University





Issues to be addressed in the workshop



- Some will be using their experience to produce a strategy for materials production and an online teaching system for novice users at a distance (a women-only Internet cafe in Somalia)
- The issues are
- How does volunteering help the development of ESD through ethical and professional skills in the curriculum?
- How scalable is volunteering?
- Can we use Altshuller's TRIZ (Theory of Creative Problem Solving) to help find some solutions





Origin of TRIZ: Altshuller



<http://www.ideationtriz.com/history.asp>

- TRIZ was initially developed from 1945-1980 by Genrich Altshuller
- He had been working in the patent department of the Soviet navy the, often giving advice to patent applicants on solving problems
- He recognised that for creativity the mind has to overcome psychological inertia-people had to think outside the box
- He reasoned that for technological inventions there are objective characteristics that could be analysed.





Analysis of the innovation process



- Altshuller analysed patents, 200,000 from all over the world
- He identified 40,000 patents that constituted "inventive" achievements, and began a rigorous analysis of these.
- Although devised for engineering applications TRIZ has been used worldwide and applied to other disciplines





9 boxes technique

(also known as 9 windows)



- has links to psychological techniques such as NLP (Neuro-Linguistic Programming)
- Elements
 - Define problem
 - Analyse problem
 - Generate solutions





How to start analysing a problem using the 9 boxes



- Problem space:
 - Set boundaries in space and time
 - Think of the hazards
- Solution space
 - Think of what's needed to block the hazards





9 Boxes Technique

9 Boxes technique

Most scientists and engineers will tend to try to solve a problem in the here and now (central box). This technique encourages the participant to think beyond the box at the super- and sub-system level and from the perspective of the past and future considerations (if the problem is not solved). The technique is to fill as many of the boxes as possible then produce a solution set.

Problem

| | Past | Present | Future |
|-------------|------|--|--------|
| Supersystem | | | |
| System | | Some women are novice computer/web users but have little opportunity because they cannot use internet cafes where men are present. | |
| Sub-system | | | |

Solution





The Somali Project



- **Giving an Alternative to Somali Girls**
(Save Somali Women and Children (SSWC))
- 100 unskilled and job-less girls in
- Mogadishu-Somalia



SSWC Project background



- Around 52% of Somali population is women. Girls and children were the most affected group by the civil strife, yet they remain the most important contributors to the family economy throughout the country.
- This project will address problems affecting Somali girls in the areas of literacy and skills training as they are denied access to educational opportunity due to cultural barriers. Beneficiaries of the project are mainly ladies returnee who joined their families after having spent one decade as refugee in neighboring countries.
- Most of them have no education access, as boys in their families were given priority to attend the existing educational institutions. Being poor and vulnerable members of the society, girls became susceptible victims of rape, abuse and marginalized groups in among the society.



Your Task

Solution (how to build a sustainable online resource)

Pre-launch Present -website is live In 2 years' time

Super-system level

System level

Sub-system level

| | | |
|--|---|--|
| | | |
| | Provide online skills and education for a group of Somalian women | |
| | | |

