Hands-on & Brains-on
at the National Museum of Science and Technology
Leonardo da Vinci

Educate in Science and Technology

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Camilla Rossi-Linnemann
2 June 2007
Workprogramme

1. development of educational model and website emerging from collaboration between school teachers and museum staff
2. teacher training courses to familiarise teachers with informal learning model
3. kit experimentation in class
4. school visits to the i.labs of Telecommunications, Robotics, Biotechnologies
5. visit of science van with the museum explainers to the classrooms
On new Museum website,

Translated in Italian for participating teachers

Linked to EXPLORA for:
- general information
- downloadable manuals
- questionnaire validation

Linking partner institutions
Teacher training
D9_Educational Model

Structure

• 3 Groups working on: telecommunications, biotechnologies, robotics
• 4-day course
• hands-on methodology
• kit experimentation

Timing

- course A: November 2006
- course B: June 2007
- course C: September 2007
Teacher training - numbers
D9_Educational Model

<table>
<thead>
<tr>
<th>Course</th>
<th>Period</th>
<th>N. of teachers x days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course A</td>
<td>November 2006</td>
<td>86 x 3</td>
</tr>
<tr>
<td>Course A</td>
<td>May 2007</td>
<td>86 x 1</td>
</tr>
<tr>
<td>Course B</td>
<td>June 2007</td>
<td>80 x 3</td>
</tr>
<tr>
<td>Course B</td>
<td>May 2008</td>
<td>80 x 1</td>
</tr>
<tr>
<td>Course C</td>
<td>September 2007</td>
<td>81 x 3</td>
</tr>
<tr>
<td>Course C</td>
<td>May 2008</td>
<td>81 x 1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>988 training days</strong></td>
<td></td>
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</tbody>
</table>
## Visits of the Science Van

**D9_Educational Model**

<table>
<thead>
<tr>
<th>Period</th>
<th>N. of visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 07 – June 07</td>
<td>86</td>
</tr>
<tr>
<td>Sept 07 – June 08</td>
<td>161</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>247</strong></td>
</tr>
</tbody>
</table>
## School visits - numbers

D10_School visits

<table>
<thead>
<tr>
<th>Period</th>
<th>N. of class visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sept 06- Feb 07</td>
<td>24</td>
</tr>
<tr>
<td>Feb 07 – June 07</td>
<td>62</td>
</tr>
<tr>
<td>Sept 07 – June 08</td>
<td>161</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>247</strong></td>
</tr>
</tbody>
</table>
## Educational Kits

### D11_Educational Kits

<table>
<thead>
<tr>
<th>Period</th>
<th>N. of kits delivered</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 2006</td>
<td>86</td>
</tr>
<tr>
<td>June 2007</td>
<td>80</td>
</tr>
<tr>
<td>September 2007</td>
<td>81</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>247</strong></td>
</tr>
</tbody>
</table>
Research and evaluation
D12_Research and Evaluation

• questionnaire
  ➢ start up
  ➢ mid-term
  ➢ end of project
  ➢ follow-up

• interviews
  ➢ one final interview
    to 2 teachers for each of the 3 i.labs

• observations of 2 classes
  ➢ a usual science lesson not connected with the project
  ➢ the explainers activity in class (van)
  ➢ the museum visit
First impressions

• Teachers asked us for a deeper connection between historical and interactive parts, especially for Telecommunication and Robotics
• Teachers appreciated historical object has containers of “complete knowledge” not divided in subjects like at school
• Positive to put the teachers in the same situation of the students, to remember the difficulty to learn, to be a student
• Important to have a contact with advanced technologies, not only with historical objects
• Importance of developing skills of communication, relationship, problem solving...
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