The Finnish Education System and its Role in Knowledge based, Innovation-driven Economy. Lessons to be learned?

Knowledge for Africa´s Development: Innovation, Education, and ICTs
Session: What is the role of tertiary education in the knowledge economy?

Johannesburg, May, 8-10.2006
Marjatta Hietala
Academy professor
University of Tampere, Finland
marjatta.hietala@uta.fi
Figure 1. Global view: Knowledge Economy Index by countries and regions, 1995 and the most recent year

Note: The Knowledge Economy Index (KEI) consists of 80 structural or qualitative variables that benchmark performance of more than 128 countries. KEI is an aggregate of all variables that are normalized from 0 (worst) to 10 (best).
Content

• Long term trends behind the success of Finland
• The Finnish school system as a whole
• Tertiary education
• Problems in capacity building within tertiary education in Africa
• Lessons to be learned from the Finnish case
Figure 10. Finland’s education system

In Finland basic education is based on the following principles:

- Regional accessibility of education
- Equal opportunities for education for both language groups (Swedish and Finnish)
- No separation of the sexes
- Instruction is free of charge
- State financial aid scheme for students
Women participate in education at all levels
Finnish Universities

1. University of Helsinki
2. University of Jyväskylä
3. University of Kuopio
4. University of Lapland
5. University of Oulu
6. University of Tampere
7. University of Turku
8. University of Vaasa
9. Åbo Akademi University
10. Helsinki University of Technology
11. Lappeenranta University of Technology
12. Tampere University of Technology
13. Helsinki School of Economics and Business Administration
14. Swedish School of Economics and Business Administration
15. Turku School of Economics and Business Administration
16. Academy of Fine Arts
17. Sibelius Academy
18. Theatre Academy
19. University of Art and Design Helsinki
20. University of Arts and Sciences
Main principles in the Finnish Higher Education

- Students are chosen on equally similar criteria in all universities: both the matriculation examination and the success in the entrance examination are taken into account
- No gender disparities
- Appr. 24% of all professors female
- During their studies students have obligatory language tests both in Swedish (the second official language) and in English
- Wide language skills emphasized
- No fee
Research and teaching at the Finnish Universities

• Research and teaching are closely linked. The quality of both important
• The evaluation of teaching and research by an international expert group
• Continuing monitoring and evaluation
• Strategic planning; Good government
• International and regional networks for Graduate training and research.
• Mobility; studying abroad
Science policy

- Effective science policy during the last two decades (the Finnish Academy, the National Technology Agency).
- Focus on Science and Technology studies/ Strong humanistic and social science tradition
- Private and Public Partnership
- Centers of excellence
Figure 11. Number of researchers (*per thousand employed*)


Note: Refers to 2001 or the latest available year. See the source for additional notes.
Figure 3. R&D expenditures as a share of GDP (%)

Academic Patents in the University of Helsinki and Helsinki University of Technology 1891-1985
Background for Finnish knowledge based society

- Lutheran Church taught people to read
- Common libraries from the beginning of 19th century
- Newspapers widely distributed
- The communicative skills of common people were developed in associations (Civil society)
- The following up system of the latest know how/ Public sector
- Gender equality
- Finland one of the most non corrupted countries
- Brain drain in minimum when building the nation-state Finland
## Education Input and pupil/teacher ratio in some countries in Africa

<table>
<thead>
<tr>
<th>Country</th>
<th>Education inputs</th>
<th>Primary pupil-teacher ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Education inputs</td>
<td>Pupils per teacher</td>
</tr>
<tr>
<td></td>
<td>Public expenditure per student</td>
<td>% of GDP per capita Tertiary</td>
</tr>
<tr>
<td>Namibia</td>
<td>93.5</td>
<td>22</td>
</tr>
<tr>
<td>South Africa</td>
<td>53.2</td>
<td>35</td>
</tr>
<tr>
<td>Zambia</td>
<td>163.8</td>
<td>43</td>
</tr>
<tr>
<td>Finland</td>
<td>37.5</td>
<td>16</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>23.2</td>
<td>17</td>
</tr>
<tr>
<td>France</td>
<td>29.3</td>
<td>19</td>
</tr>
<tr>
<td>World</td>
<td>36.4</td>
<td>24</td>
</tr>
<tr>
<td>Europe &amp; Central Asia</td>
<td>26.4</td>
<td>17</td>
</tr>
<tr>
<td>Middle East &amp; N. Africa</td>
<td>50.2</td>
<td>23</td>
</tr>
<tr>
<td>South Asia</td>
<td>68.7</td>
<td>40</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>220.8</td>
<td>45</td>
</tr>
<tr>
<td>Europe EMU</td>
<td>28.4</td>
<td>14</td>
</tr>
</tbody>
</table>

Source: World Development Indicators
Fig. 14 Circulation of daily general-interest newspapers per 1,000 inhabitants, 1996
Diffusion des journaux quotidiens d'information générale pour 1,000 habitants, 1996
Difusión de la tirada de periódicos diarios de información general por 1,000 habitantes, 1996

Legend:
- 350-1000
- 100-349
- 40-99
- 10-39
- 0-9
- No known daily publication

Reference: Table IV.8
Référence: Tableau IV.8
Referencia: Cuadro IV.8
Some Basic Indicators

<table>
<thead>
<tr>
<th>Country</th>
<th>Population mid-2003 (millions)</th>
<th>Life expectancy at birth (years)</th>
<th>GNI per capita Av. annual percentage growth 1999-03</th>
<th>GDP per Capita (Current price, $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethiopia</td>
<td>68.6</td>
<td>42</td>
<td>1.6</td>
<td>94</td>
</tr>
<tr>
<td>Kenya</td>
<td>31.9</td>
<td>45</td>
<td>-0.2</td>
<td>449</td>
</tr>
<tr>
<td>Mozambique</td>
<td>18.8</td>
<td>41</td>
<td>4.4</td>
<td>229</td>
</tr>
<tr>
<td>Namibia</td>
<td>2.0</td>
<td>40</td>
<td>1.8</td>
<td>2 149</td>
</tr>
<tr>
<td>South Africa</td>
<td>45.8</td>
<td>46</td>
<td>0.1</td>
<td>3 674</td>
</tr>
<tr>
<td>Tanzania</td>
<td>35.9</td>
<td>43</td>
<td>1.2</td>
<td>278</td>
</tr>
<tr>
<td>Zambia</td>
<td>10.4</td>
<td>36</td>
<td>0.0</td>
<td>401</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>705.2</td>
<td>46</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>North Africa</td>
<td>145</td>
<td>70</td>
<td>1.8</td>
<td></td>
</tr>
<tr>
<td>All Africa</td>
<td>850.2</td>
<td>50</td>
<td>0.6</td>
<td>788</td>
</tr>
</tbody>
</table>

Source: African Economic Outlook 2004/2005
Some problems in Higher Education in Africa

- Gender disparities
- Brain Drain
- Language problems (bilingualism recommended)
- Low focus in Science and Technology
- Lack of databases
- Underpaid professors
## Gross Enrolment Ratio

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>Second. Both sexes</th>
<th>Second. Female</th>
<th>Tertiary Both sexes</th>
<th>Tertiary Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethiopia</td>
<td>13</td>
<td>20</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Kenya</td>
<td>(** 30)</td>
<td>33</td>
<td>(** 28)</td>
<td>(** 32)</td>
</tr>
<tr>
<td>Mozambique</td>
<td>(** 10)</td>
<td>16</td>
<td>(** 8)</td>
<td>13</td>
</tr>
<tr>
<td>Namibia</td>
<td>57</td>
<td>62</td>
<td>61</td>
<td>66</td>
</tr>
<tr>
<td>South Africa</td>
<td>(*) 90</td>
<td>89</td>
<td>(*) 95</td>
<td>91</td>
</tr>
<tr>
<td>Zambia</td>
<td>20</td>
<td>28</td>
<td>(** 17)</td>
<td>25</td>
</tr>
<tr>
<td>(***) UIS estimation</td>
<td>(*) National estimation</td>
<td>...</td>
<td>Data not available</td>
<td></td>
</tr>
</tbody>
</table>
Lessons, Recommendations

- Enhance the links between various actors in higher education and their community for sustainable development
- Integrate allowances of private education to national system
- Integrate higher education to other sectoral policies
- Regulation: accountability instead of control
- Strengthening the national infrastructure in policy development, ICT and exchange programmes
- Increase commitment by governments for developing ICT at universities; e-learning
Recommendations (contin.)

• Mobility programmes needed
• Dialogue between different cultures needed (Southern-Northern, Eastern-Western Africa)
• Strengthening of cultural consciousness. National spirit/civic pride is needed (comp. Finnish case)
  Would it help to prevent brain drain?
• Personal trust and commitment on all levels; organisational confidence
• Long term visions needed as well as short term plans
Promotion