Rethinking Higher Education Research: Ontology Mapping of Higher Education Systems

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Agenda

• Mapping as an alternative to ranking
• An Ontology of Higher Education (HE)
• Mapping a HE system
  – The institutions in the system
  – Data collection
  – Data coding
• Results
• Conclusion
• Contribution and limitations
An Ontology of HE

**Illustrative synthetic vision/mission statements from the 3,000 possible combinations:**
- The premier institution in the world in research in sciences for scientific development in a knowledge society.
- A basic institution in the city in service in arts for cultural development in a knowledge society.
- ...
HE Institutions in Karnataka

State-run Universities (22)
- Open university (1)

Other Universities (19)
- Central university (1)
- Deemed to be universities (15)
- Private universities (2)
- National/Central institutes (1)

University-like Institutes/Centers (24)
University-like Corporate Entities
- R&D Centers
- Corporate workplace universities

Vocational Education
- Polytechnics
- Industrial Training Institutes/Centers (600+)
- Job Orientation Courses

Colleges (3078)
- Affiliated (3029)
- Autonomous (49)

Schools (KSB, CISCE, CBSE)
- Government
- Private unaided
- Private aided

Cultural Resources
- Traditional knowledge centers and individuals
- Libraries
- Museums
- Performing Arts

Auxiliary Education
- Tutorial programs
- Coaching classes

Informal Education
- Community groups, NGOs, CSOs
- Religious groups
- Extracurricular activities
- Sports and games

Data Collection

• Population of HE institutions in Karnataka (N=65)
• Vision statements, mission statements, objectives, Vice Chancellor’s speeches, Strategic Plans, etc. downloaded from the web for all 65
• Description of the institution if the above are not available
• Classification of HE institutions
  – Specialized (41)/Comprehensive (24)
  – Research (10)/Private (7)/State (24)/ Deemed (16)/National (8)
  – Location (map)
HE in Karnataka
Data Coding: Synthetic Vision/Mission

• Construction of a synthetic vision/mission statement for each institution within the framework

• Examples:
  – Alliance University
    • Original: “Alliance University’s vision is to be a world-class University that nurtures talent and catalytically transforms the lives of millions through excellence in teaching, research, service and community development. To uphold a commitment to shaping lives through scholarly teaching and learning, and that which contributes to an equitable and holistic transformation of society at large.”
    • Synthetic: A leading institution in the world in education, service and research in sciences, professions, humanities, and fine arts for scientific, technical, economic, social and cultural development in a knowledge society.
  
  – Tumkur University
    • Original: “To create a generation of human resources to successfully meet the global challenges.”
    • Synthetic: An advanced institute in the state/province in education, research, and service in humanities, sciences, and fine arts for social development in a knowledge society.
Coding Method: Synthesizing Vision/Mission

• Consensus coding
  – Agreement by four (Ramaprasad, Tanveer, Chetan, Bhumika) on 35 institutions
  – Agreement by three (Ramaprasad, Tanveer, Chetan/Bhumika) on 30 institutions
• Initial coding by one person (Chetan/Bhumika)
• Verification by a second person (Bhumika/Tanveer)
• Discussion by all four (35) or by Ramaprasad and Tanveer (30) and final coding
• Priority of Function, Focus, and Outcome determined by order of presentation and emphasis
# Data Coding Spreadsheet

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Breadth</th>
<th>Location</th>
<th>Aspiration</th>
<th>Scope</th>
<th>Function</th>
<th>Focus</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>University A</td>
<td>Private</td>
<td>Comprehensive</td>
<td>City 1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>University B</td>
<td>State</td>
<td>Comprehensive</td>
<td>City 2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

**Aspiration**: The Premier, The Leading, The Advanced, The Basic

**Scope**: World, Region, Country

**Function**: Research, Education, Service

**Focus**: Students, Professors, Vocations, Art

**Outcome**: Scientific, Technical, Economic, Social

**Synthetic Vision/Mission Statement**
- A leading institution in the world in education, services and research in sciences, professions, humanities, and arts for scientific, technical, economic, social and cultural development in a knowledge society.
- An advanced institute in the state renowned in education, research, and service in humanities, sciences, and arts for social development in a knowledge society.
### Ontological Map of the State-of-the-Apception

<table>
<thead>
<tr>
<th>Aspiration</th>
<th>Scope</th>
<th>Function</th>
<th>Focus</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>The A/An Premier</td>
<td>World (13)</td>
<td>Research (58)</td>
<td>Sciences (43)</td>
<td>Scientific (33)</td>
</tr>
<tr>
<td>A/An Leading</td>
<td>Region (0)</td>
<td>Education (56)</td>
<td>Professions (38)</td>
<td>Technical (24)</td>
</tr>
<tr>
<td>Advanced</td>
<td>Country (30)</td>
<td>Service (34)</td>
<td>Vocations (1)</td>
<td>Economic (13)</td>
</tr>
<tr>
<td>Basic</td>
<td>State (22)</td>
<td>Fine Arts (18)</td>
<td>Humanities/SS (26)</td>
<td>Social (52)</td>
</tr>
<tr>
<td></td>
<td>District(s) (0)</td>
<td></td>
<td>Cultural (13)</td>
<td></td>
</tr>
</tbody>
</table>

The bright, light, blind/blank spots of the HE system.
Contributions

- Conceptual
  - Ontology of HE: Parsimonious, Systematic, and Systemic

- Method
  - Ontological mapping of HE Institutions: Comprehensive

- Results
  - Bright, Light, Blind/Blank spots of HE System: Directive
Limitations

- Focused on one state – can be generalized
- Limited to publicly available data on the web
- Limited to analysis of monads – dyads, triads, and other analysis not presented in this paper