Training Workshop on Education Policy Formulation & Monitoring

UNESCO Bangkok

May 27th–31st, 2013
Introduction to Education Simulation Model

Education Policy and Reform Unit
Outline of presentation

1. Education planning – making the case for a systematic approach
2. What are simulation models and why use them?
3. Types of simulation models
4. Examples of simulation model applications
Education planning – making the case for a systematic approach

Part 1
Planning today is more complex, due to:

- the multiplicity of stakeholders – increasing the need to build “consensus” or “compromise”
- rapid change – impacting on planning cycles
- education development in a “competitive” environment, and
- intensifying the pressure for results, including by external partners in aid-dependent countries

These factors combine to make planning more demanding in terms of technical and “non-technical” requirements.
Policy and planning in education

* Policy is about introducing change, while planning is about preparing and organising for change/improvement

* Change management in education is a complex process, as it:
  - can be slow, requires ownership
  - requires investment in terms of research and evidence-building to inform policy and social dialogue
  - Needs to take account of the interplay of various aspects of education (e.g. production chain, policy dialogue, social demand, etc.)
  - has to be considered from a wider multi-sectoral perspective (including macro-economic circumstances, other governmental priorities, etc.)

* Education planning therefore requires thinking systematically
... also considering possible mismatch between policy intent and financing.
Modelling the education system

Knowledge level
- Basic
- Secondary
- Higher
- Technical and vocational

Knowledge transmission
- Formal
- Non-formal
- “Informal”

“Analytical” components
- Access
- Quality
- Equity
- Management

Production components
- Inputs
- Process
- Outputs
- Outcomes

Life-long learning perspective

Analytical framework
What are simulation models and why use them?

Part 2
A simulation model is a tool for **analysing**, **exploring** and **projecting** complex social and economic systems.

Why use simulation modelling in education sector analysis and planning?

- To explore possible options for correcting any past shortcomings
- To test “policy” implications of potential planning decisions
- To assist in generating credible, sector-wide and costed plans
- To facilitate negotiation with stakeholders on policy objectives and resourcing – “consensus” (if not “compromise”) building
- To address the fact that policy-making takes place in a “competitive” environment – need for clarity and feasibility
Steps of strategic planning

* The **system is analysed** (diagnosis)
* The **future is explored/defined** (prognosis/policy formulation)
* The **“work” is planned** (action planning)
* The **progress/results are reviewed** (assessment, monitoring and evaluation)

Steps of simulation

* The **baseline data are entered** (data input)
* The **policy assumptions are made** (decision/independent variables)
* The **results are projected** (dependent variables)
* The **indicators are derived** (path generation)
In sum: why use simulation modeling?

* Simulations are therefore used in education planning to:
  - enhance knowledge
  - “explore” the future
  - help design policy and strategies
  - estimate resource implications

* They offer a range of benefits, including:
  - facilitating a sector-wide perspective
  - boosting the credibility of the planning process
  - assisting in negotiation with stakeholders on policy, resourcing and trade-offs
The two “types” of simulation models:
- “Generic”
- Country-specific

The two main modelling approaches: characterized by the variables from which they start:
- **Financial/budgetary models** – concerned first with generating a budget ceiling for education from which educational outputs can be projected
- **Demographic models** – start with demographic trends and enrolment objectives in order to estimate budgetary implications
Simplified demographic simulation model

PART 3

Population

Intake, registration and flow rates

Enrolments at each education level

Teachers and other staff
Buildings and equipment
Instructional materials

Yearly recurrent and capital cost projections
Simulation approaches

Financial / budgetary model (driven by unit costs)

- Per student unit cost
- Budget ceilings

- Number of students
  \[ \frac{\text{Number of students}}{\text{Per student unit cost}} \]

- Ratios of students to teachers, equipment etc
- Number of teachers, buildings etc

Goals-based / needs-based model (driven by demographic trends)

- Enrolment-related targets
- Flow rates

- Number of students

- Ratios of students to teachers, equipment etc

- Number of teachers, buildings etc

- Financial resource requirements
Examples of simulation model applications

Part 4
Simulation Model Applications by UNESCO: Selected examples

1. Sector Planning
2. Decentralized Education System Support
3. Sector Policies and Strategies Reform
4. Research
<table>
<thead>
<tr>
<th>Country</th>
<th>Purpose</th>
<th>Outcome/Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moldova</td>
<td>Development of a sector plan to delineate needs of development of Early Childhood Education</td>
<td>Capacity building in policy dialogue; Planning and design of financing framework in favour of ECE development in the context of EFA Fast Track Initiative - leading to Moldova to be first country benefitting FTI grant for ECE only.</td>
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<tr>
<td>Mongolia</td>
<td>Development of the Master Plan</td>
<td>Sector-wide master planning and education sector plan for Mongolia to benefit from the EFA-FTI grant ($29M)</td>
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<td>Vietnam</td>
<td>Design/update of EFA plan</td>
<td>Review/update of the EFA action plan to support Vietnam in receiving Global Partnership for Education Grant (GPE) of some $90M</td>
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<td>Uzbekistan</td>
<td>Revision/Improvement of an Education Sector Plan (ESP)</td>
<td>Strengthening the Education Sector Plan and development of credible financing and M&amp;E frameworks for Uzbekistan to receive some $40M from GPE</td>
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<tr>
<td>Cambodia</td>
<td>Development of an ESP</td>
<td>Support to developing an ESP, also to benefit GPE funding (On-going)</td>
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<th>Country</th>
<th>Purpose</th>
<th>Outcome/Output</th>
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<tr>
<td>Argentina</td>
<td>Provincial policy and resource frameworks to align with the national goals</td>
<td>Policy options for increased resource allocations for disadvantaged children and youth; capacity building for provincial managers</td>
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<tr>
<td>Nigeria</td>
<td>State education plans in conformity with the national education policy</td>
<td>Supported education sector analysis and development of 10-year plans in 6 states of Nigeria; Mainstreaming Child-Friendly School (CFS) in the core education system</td>
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<td>Mozambique</td>
<td>Decentralized plans at provincial &amp; district levels</td>
<td>Capacity building in translating and implementing the national plan; Improvement of the national plan</td>
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<td>Sudan</td>
<td>Capacity building in planning, M&amp;E at federal and state levels</td>
<td>Training in statistics, policy dialogue, planning, and M&amp;E for regional education managers; Support in coordination of ministries of education</td>
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<td>Vietnam</td>
<td>Decentralized education sector planning</td>
<td>Support in bottom-up approaches to education sector planning and decision-making for resources allocations</td>
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<td>Algeria</td>
<td>Student flow management</td>
<td>Policy dialogue among three ministries of education in view of articulation in development of compulsory, higher and technical/vocational education</td>
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<td>Croatia,</td>
<td>Alignment with EU policies and standards</td>
<td>Review of the education policies; capacity building in policy formulation, reform and programme M&amp;E</td>
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<td>Montenegro &amp;</td>
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<td>Serbia</td>
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<td>Niger</td>
<td>NFE policy formulation</td>
<td>Support in capacity building and development of policy and strategy for non-formal education</td>
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<td>Ecuador</td>
<td>Development of pro-poor policy within the</td>
<td>Design of policy options to induce minorities to mainstream education and to provide adequate support to them</td>
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<td>Mongolian</td>
<td>Structural reform in education</td>
<td>Support in identifying and anticipating policy and resource implications for the introduction of a new educational structure (from 5:4:2 towards 6:3:3 or 5:4:3)</td>
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Research

* GMR 2010: Reaching and Teaching the Most Marginalised

* Estimating the funding gaps as well as external financing necessary to achieve EFA goals at country level – 3 case studies (Addressing Marginalisation in Education)

* Identifying country specific policy options and gauging the cost implications of addressing the marginalization in a sector wide perspective

* Policy and resource implications for achieving quality universal basic education in terms of teacher policies (preparation, recruitment, professional development, salaries and incentives)
THANK YOU