

第5回教育ネットワーク研究会 教育セクター支援の 審査に使える分析方法

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広島大学教育開発国際協力研究センター
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今日の内容

- 途上国教育セクターの課題分析
- 教育プロジェクトのアブレイザル
- 教育プロジェクトの案件監理
- 教育プロジェクトの事後評価
- Discussions

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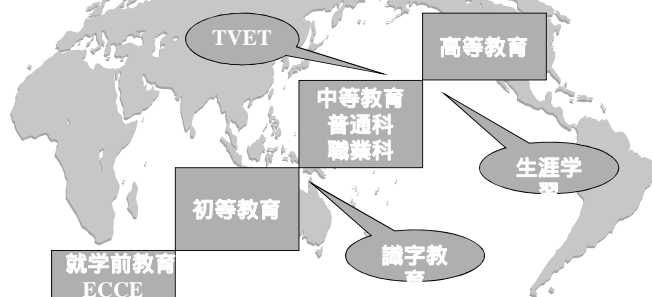
Concept of Education Sector Analysis



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途上国の教育

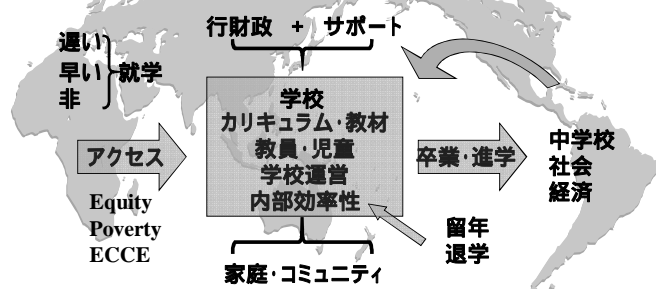
学校教育とその周辺



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途上国の教育

初等教育をめぐる諸要因



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Access and Equity

- Enrolments (#, F/M, public/private)
- New entrants
- GER & NER
- Gross Intake Ratio & NIR
- Repeaters & Dropouts
- Survival rate to Grade 4/5
- Gross Graduation Ratio
- Transition Rate (from Primary to Secondary)

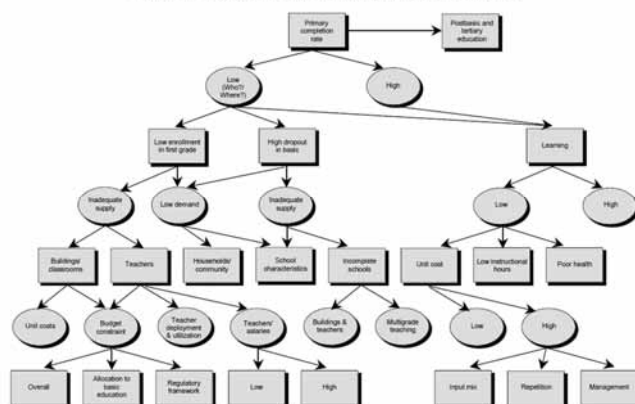
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課題発掘から原因究明へ

- 幾つかの入手しやすいデータで当たりをつける
 - ユネスコ: EFA, GMR
 - 世銀: EdStats
- 問題の箇所を深掘りする 追加資料収集
- その背景要因を調べる

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Figure P.1. Decision Tree for Analyzing Education Outcomes



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Table 1 Background statistics

DEMOGRAPHY ¹					HIV/AIDS ²		
Total population 1999	Average annual growth rate (%) total population	Average annual growth rate (%) 0-4 population	Life expectancy at birth (years)	Total fertility rate (children per woman)	HIV prevalence rate (%) in adults (15-49)	% of women among people (age 15+) living with HIV	Orphans due to AIDS (0-17) (000)

Table 4 Access to primary education

Table 4. Access to primary education				GROSS INTAKE RATE (GIR) IN PRIMARY EDUCATION (%)											
Country or territory	Compulsory education (age group)	Legal guarantee of free education	New entrants (000) School year ending in 19992004	School year ending in 1999				School year ending in 2004							
				Total	Male	Female	GPI (F/M)	Total	Male	Female	GPI (F/M)				
NET INTAKE RATE (NIR) IN PRIMARY EDUCATION (%)				SCHOOL LIFE EXPECTANCY (expected number of years of formal schooling from primary to tertiary education)											
School year ending in				School year ending in								School year ending in			
19992004				19992004				19992004				19992004			
Total	Male	Female	GPI (F/M)	Total	Male	Female	GPI (F/M)	Total	Male	Female	GPI (F/M)	Total	Male	Female	GPI (F/M)
72	76	68	80	72	76	68	80	72	76	68	80	72	76	68	80

Table 5 Participation in primary education

Country or territory	Age group	School-age population (000)	ENROLLMENT IN PRIMARY EDUCATION				Enrollment in private institutions as % of total enrollment	GROSS ENROLLMENT RATIO (GER) IN PRIMARY EDUCATION (%)			
			School year ending in 1999	School year ending in 2004	Total	% I		School year ending in 1999	School year ending in 2004	Total	GPI (I/M)

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Access and Equity

- By gender
- By region
 - state/province, urban/rural
- By ethnicity
- By income level
- Disability, Orphan, IDP
- Children not in school

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Quality (of inputs)

- Teachers (#)
- Trained/Certified Teachers
- Pupil-Teacher Ratio
- Pupil's readiness/health
- Curriculum
- Materials, textbook, library
- Infrastructural environment, toilet

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Quality (of process)

- Language: instruction vs mother
- Teaching and Learning
- Planned/actual teaching hours
- Intended/actual curriculum
- Training of/support to teachers

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Quality (of outcomes)

- Academic results
- Promotion, completion, transition
- (Employability)

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Management

- Institutional analysis
 - Roles and authority/resources
- Resource management
 - Teacher deployment
 - Budgeting, Resource allocation
- Monitoring and Evaluation

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Efficiency - Internal efficiency

- Repetition
- Cohort flow analysis
 - Average years studied by a graduate
 - Average years studied by a dropout
 - Average years taken per graduate
- Unit cost per graduate
- Cost Effectiveness

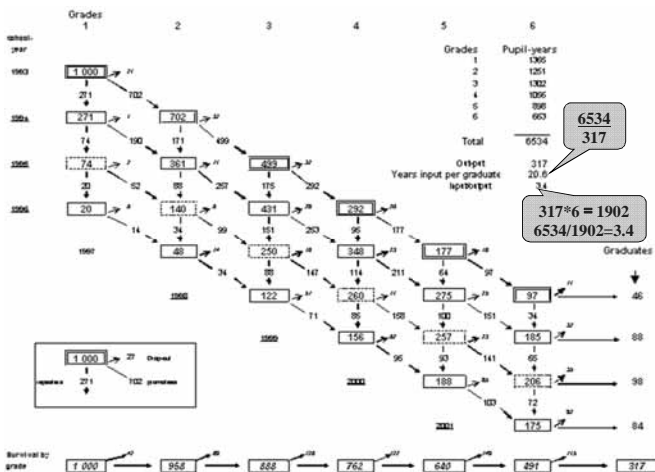
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Reconstructed Cohort Method

1. 就学者数、留年者数からFlow ratesを算出。

Grades	1	2	3	4	5	6
Promotion rates	70.2%	71.0%	58.5%	60.6%	54.7%	47.8%
Repetition rates	27.1%	24.4%	35.1%	32.7%	36.3%	35.1%
Drop-out rates	2.7%	4.6%	6.4%	6.7%	9.0%	17.1%

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Sample of Internal Efficiency

- Total pupil-years spent by a cohort: 6534
- Total output (graduates) : 317
- Pupil-years used per graduate:
 $6534/317=20.6$ years
- Desirable pupil years for the graduates:
 $317*6=1902$
- Input-output ratio: $6534/1902=3.4$

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External Efficiency

- Graduate employability
 - Academic area vs. employment
 - Expected vs. actual earning
 - Higher productivity
- Health outcomes
 - IMR
 - Reduced population growth
- Other social benefits

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Costs and Finance

- 20/20 initiative in 1990s
 - 20% for basic social services by Gov
 - 20% to basic social services by donors
- Double the Assistance to Africa - Gleneagles
- EFA-FTI Indicative Framework

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Indicative Framework

Average teacher salary	3.5 times pcGDP
PTR	40:1
Non-salary spending	33% of recur spending
Repetition	10% or lower
Government education spending	20%/Gov revenue
Primary education spending	43-50% / total ed. recur. spending
Private enrollments	10%

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To Achieve EFA-UPC

- Total external financing gap for low-income 47 countries: \$2.5 billion per year (using the Indicative FW, including HIV/AIDS and Afghan effects, WB=Bruns and Mignat, 2003) o/w 55% recurrent
- Unit costs increases from \$32 to \$76 per pupil (constant 2000 \$) in 2015.

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Costs and Finance - PER

- Trend of Education Expenditure
 - Budget vs actual expenditure
 - Nominal and Real expenditure
 - Percent of government expenditure
 - Recurrent and Capital expenditure
 - Salary and non-salary expenditure
 - Central and local government expenditure
 - Off-budget expenditure: ODA, household

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Table 3.3. Trends in Government Expenditure on Education, 1991-1994

		1991	1992	1993	1994
EXPENDITURE AT CONSTANT 1991 PRICES (in VND millions)					
State Budget	Current	957,357	1,128,700	1,696,436	2,290,572
	Capital	298,839	408,134	616,078	595,108
Government Expenditure*	Current	997,976	1,164,689	1,738,105	2,337,257
	Capital	483,971	622,473	874,437	1,138,215
	Total	1,481,946	1,787,162	2,612,541	3,475,472
GROWTH OF EXPENDITURE (Annual Percent)					
State Budget	Current		18%	50%	35%
	Capital		37%	51%	-3%
Government Expenditure*	Current		17%	49%	34%
	Capital		29%	40%	30%
	Total		21%	46%	33%
PER CAPITA EXPENDITURE AT CONSTANT 1991 PRICES (in VND)					
Government Expenditure*	Current	14,725	16,781	24,471	32,234
	Capital	7,141	8,969	12,312	15,697
	Total	21,866	25,750	36,783	47,931
PERCENTAGE SHARE OF DISCRETIONARY STATE BUDGET					
Government Expenditure*	Current	8.8%	6.8%	7.3%	9.3%
	Capital	2.8%	2.5%	2.6%	2.4%
	Total	11.6%	9.3%	9.9%	11.8%
PERCENTAGE SHARE OF GDP					
Government Expenditure*	Current	1.3%	1.4%	1.9%	2.4%
	Capital	0.6%	0.7%	1.0%	1.2%
	Total	1.9%	2.1%	2.9%	3.5%

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Costs and Finance - PER

- Unit cost
 - By level of education
 - By region/state/province
 - Per pupil vs. per graduate
 - Contents:
 - Average teacher salary
 - trend, by level, vs minimum salary
- using unit cost for projection/planning

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Example of Unit Cost Analysis

Level	Annual cost per student (\$)	Cost per student as percent of GNP pc (%)	No. of student years to produce a graduate	Cost per graduate (\$)
Primary	12.7	3.6	8.7	110.5
Secondary				
Government	67.9	19.4	13	882.7
Non-Govt	16.3	4.7	13	211.9
Madrasah (Govt.)	161.6	46.2	18	2 909.0
Govt. College	88.6	25.3	3.3	292.0
Technical	300.0	85.7	Na	Na
Degree College	93.0	26.5	Na	Na
University	731.1	210.0	Na	Na

Bangladesh, 1999

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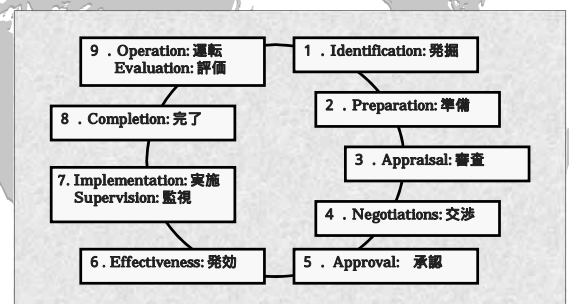
Example of Household

		per student per year		
		Pre-school	Primary	Lower secondary
URBAN	Amount paid to school	126,709	50,130	85,055
	School fees	81,250	379	33,500
	School improvement fees	35,000	29,370	28,347
	Parent association fees	4,259	10,201	10,244
	Other out-of-pocket payments			
	Textbooks	360	32,888	54,243
	School supplies/materials	5,566	30,798	46,334
	Uniforms	12,235	46,649	72,163
	Tutoring	5,147	65,339	182,750
	Transportation	1,559	2,777	14,779
	Total excluding meals	158,886	260,899	487,519
RURAL	Amount paid to school	27,114	26,749	53,858
	School fees	13,968	291	25,608
	School improvement fees	7,058	16,947	19,093
	Parent association fees	991	3,321	1,840
	Other out-of-pocket payments			
	Textbooks	1,190	22,500	38,106
	School supplies/materials	2,836	19,421	33,620
	Uniforms	8,985	26,907	43,606
	Tutoring	-	5,825	24,093
	Transportation	-	757	3,604
	Total excluding meals	41,868	104,832	202,696

Source: VSSS, 1996

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世銀のプロジェクト・サイクル



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アブレイザル（審査）・・・1

- Project Development Objective
 - Project development **objective**
 - Key performance **indicators**
- Strategic Context
 - Sector-related Country Assistance Strategy (**CAS**) goal supported by the project
 - Main sector issues and Government strategy
 - Sector issues** to be addressed by the project and strategic choices

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アブレイザル（審査）・・・2

- Project Description Summary
 - Project components
 - Key policy and institutional **reforms** supported by the project
 - Benefits** and **target** population
 - 受益者（一般、貧困層etc）の特定
 - Institutional and implementation arrangements

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アブレイザル（審査）・・・3

D. Project Rationale

1. Project **alternatives** considered and reasons for rejection
2. Major related projects financed by the Bank and/or other development agencies
3. **Lessons** learned and reflected in the project design
4. Indications of recipient **commitment** and ownership
5. **Value added** of Bank support in this project

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アブレイザル（審査）・・・4

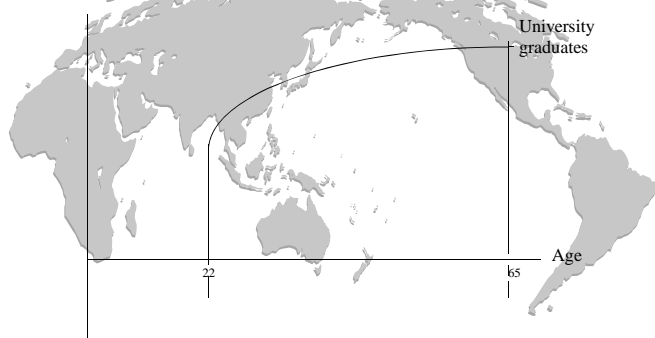
E. Summary Project Analysis

1. Economic (incl. Cost-Benefit)
2. Financial (& Fiscal Impact, Cost Recovery)
3. Technical
4. Institutional
5. Environmental
6. Social (poverty, gender, disadvantaged)
7. Safeguard Policies

Cf. 10 Dimensions of Economic Analysis

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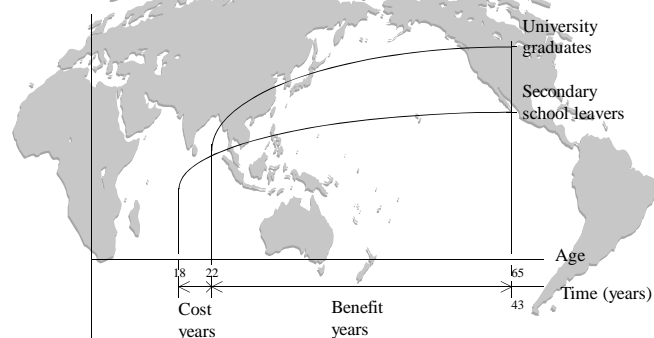
Graph on Rate of Return Estimation for University-level Education



Source: Psacharopoulos (1981).

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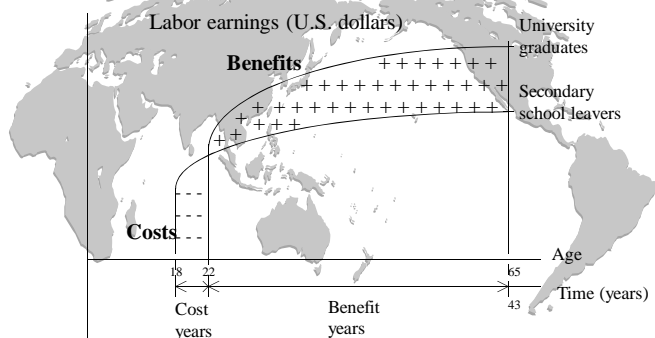
Graph on Rate of Return Estimation for University-level Education



Source: Psacharopoulos (1981).

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Graph on Rate of Return Estimation for University-level Education



Direct costs (U.S. dollars)

Source: Psacharopoulos (1981).

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教育の投資効果: Rate of Return

	ソーシャル収益率			プライベート収益率		
	初等	中等	高等	初等	中等	高等
アジア	16.2	11.1	11.0	20.0	15.8	18.2
欧州・中東・北アフリカ	15.6	9.7	9.9	13.8	13.6	18.8
ラ米・カリブ	17.4	12.9	12.3	26.6	17.0	19.5
サブ・サハラ・アフリカ	25.4	18.4	11.3	37.6	24.6	27.8
OECD	8.5	9.4	8.5	13.4	11.3	11.6

G. Psacharopoulos, et al., 2002 Returns to Investment in Education: A Further Update

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Ghana Basic Education Sector Costs and Financing Simulation 1994-2005					
Based on the 1994 actual enrollments. Asterisk (*) in the column B indicates the cell contains technical notes.					
Medium Scenario	*	1996	1998	2000	2005
Basic Education Costs					
Total Costs for Basic Education	*	\$236,790,548	\$273,295,092	\$300,492,747	\$356,186,586
RECURRENT Costs (w/household)		\$193,345,678	\$214,015,266	\$236,278,547	\$313,423,531
Recurrent Costs (w/o household)		\$142,851,529	\$157,512,220	\$171,928,210	\$215,414,960
teacher salary		\$127,379,291	\$141,119,851	\$154,407,802	\$193,772,586
Basic education CAPITAL costs	*	\$26,659,237	\$12,563,439	\$8,198,926	\$39,271,944
Capital costs for additional student space	*	(\$580,763)	\$12,563,439	\$7,898,926	\$39,271,944
On-going donor supported project		\$27,240,000	\$300,000.0	\$300,000.0	\$37,940,000
BETTERMENT		\$16,204,870	\$58,979,827	\$63,914,199	\$42,763,054
1. Teaching and Learning		\$13,012,660	\$32,178,703	\$27,108,036	\$35,003,054
2. Management for Efficiency		\$1,402,000	\$8,446,000	\$3,348,000	\$7,228,000
3. Access and Participation		\$663,000	\$11,842,000	\$23,796,000	\$4,532,000
Price Contingencies		0.2	3.5	6.5	
Physical Contingencies		0.9	3.1	3.2	
FINANCING PLAN					
Total Finance		\$236,670,381	\$270,995,342	\$280,349,093	\$332,842,791
Total R+C Finance (excl. Donors)		\$201,870,381	\$223,395,342	\$248,349,093	\$332,842,791
DONORS		\$34,800,000	\$47,600,000	\$32,000,000	\$0
FINANCING GAP					
Total Costs-Total Finances	*	\$120,166	\$2,299,751	\$20,143,654	\$23,343,794

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アプレイザル（審査）・・・5

F. Sustainability and Risks

1. Sustainability
2. Critical risks
3. Possible controversial aspects

G. Main Conditions

1. Effectiveness Condition
2. Other

H. Readiness for Implementation

I. Compliance with Bank Policies

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アプレイザル（審査）・・・6

Annex 1 : Project Design Summary

Annex 2: Detailed Project Description

Annex 3: Estimated Project Costs

Annex 4: Economic Analysis

Annex 5: Financial Summary

Annex 6: (A) Procurement, Financial Management and Disbursement Arrangements

And other Annexes

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ロジカル・フレームワーク

目標	主要指標	モニター評価	前提条件（リスク）
国別支援戦略目標 より良い教育サービスの提供と 教育公的資金の効率的利用			
事業目的 ・ 教育、資金利用効率性の改善 ・ 質の高い教育へのアクセス改善 （特定地域において）			
コンポーネント・アウトプット ・ 生徒当たり予算配分(政策) ・ 貧困地域就学者数増加			
教育サービスのアウト・インプット ・ 農村貧困地区校舎建設 ・ 教材配布・教員訓練			

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参考資料

- JBIC (内部書類)
 - － 教育セクター調査マニュアル
 - － 審査資料集
 - － 運用効果指標
- 世界銀行:
 - － Analytical Tools for Sector Work in Education (1987)
 - － Analytical Tools for Investment Operations (2001)

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