

ECONOMIC MODEL COST-SATISFACTION IN INCLUSIVE EDUCATION. BASED ON RESEARCH MADE IN GEORGIA

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Abstract: *This research comprises a brief analysis of the economic model design, projected for poor countries, where complex assessments of the health status, education outcomes and motivation for children with disabilities are impossible to be done; is possible to be applied on a national scale in Georgia, if the actual government has the necessary resources, or, in other countries, having a similar lack of expertise in special education and disabled children assessment. The National Curriculum Assessment Centre from Georgia is envisaging such development, and finding the best ways to identify various needs for teacher training, auditing and report procedures and funding this future development, and to identify alternative sources for finance.*

We consider the aim and the objectives of the research, reflected in this paper, as leading to appropriate actions to satisfy the needs of disabled children, enough general to afford the opportunity of replication at a broader scale. The lack of skilled and dedicated human resources – expertise, counselling, care for children for special needs could be in a measure cushioned, if this model is applied on national scale.

Key words: *economic model; cost-satisfaction; inclusive education; Georgia*

1. Executive summary

This research comprises a brief analysis of the Inclusive Education Pilot, started in 2004 with Norwegian support and expertise. The report is offering tools for auditing, reporting and economic analysis for inclusive education, with the view to help the extension of the inclusive education pilot to whole country, valuing experience and structures created by the pilot. The National Curriculum Assessment Centre is envisaging such development,

and finding the best ways to identify various needs for teacher training, auditing and report procedures and funding this future development, and to identify alternative sources for finance.

1. The pilot accomplished its broad mission, and the effects produced by the project will continue to be seen in the future. In addition, I see a great opportunity for the pilot outcomes to generate the growth of a new educational approach within the broad picture of the Georgian educational system. A number of possible developments are needed such as the creation of links between the subsystems of the public education, more accountability and coherence between resources means and aims. The most important development is the transformation of the audacious political approach towards the Georgian school autonomy into a motor of the broader social and economical development.

2. The rapid pace of changes introduced by the laws in force (Education Law, Finance Law) and policies implemented (decentralization, school autonomy, broad management freedom for the school boards and principals) created a series of problems that will be reported in detail in the second chapter: **“A brief analysis of risk factors at systemic, school and students’ level”**. The pilot schools experience a series of problems due to insufficient funds from the vouchers, on the one hand, and lack of effective procedures for decision making and general financial management, on the other hand. These matters will be detailed in the paragraph dedicated to inclusive pilot budget and finance aspects.

3. The decentralization process in administration, with the focus on financial issues pertaining to education, went back and forth, starting with a strong move to devolve all local government (oblast and rayons). The funds for schools managed at local level were not accompanied by a clear decision making criteria for allocation of funds to individual schools. The lack of a clear procedure for fund distribution resulted into conflicting auditing and financial reporting procedures (double reporting from rayon offices, both to elected local councils bodies and to higher levels in the Ministry of Education and Science).

Starting from 2003, connected with the anti-corruption fight, a reform was initiated in all levels of government but also specific to the education sector. The leader in the education reform was the minister Melikidze. The measures implemented under his authority are characteristic of crisis management, being based on recentralizing decision making and budget and going up to the redefinition of the MoES hierarchical structures.

4. The most common forms of corruption in schools were at that time the private payments into the public schools and the misappropriation of funds earmarked for schools at the local government level. Special classes still exist in the inclusive pilot schools. These classes focus on educational services demanded and desired by the parents (art classes, sports, foreign languages, etc). For example in one of the visits of the pilot I found out that no evidence, tracking records, contracts or other legal forms, completed or signed by the parties, could be produced. This is a major weakness of the actual auditing and reporting system, and the recommendations section of this report will address it together with suggestions on improvement measures.

5. One of the major issues is the lack of correlation between the principles adopted for financing schools (the voucher system), the project aim and objectives, and the level of professional training and skills for the school principals and school teachers. However, the project has had the potential to instill changes in the professional behavior and trigger a

process of transforming the mental models of the people on which the Norwegian project, and then, the new project led by the Ministry focused.

2. General statements about the inclusive pilot

1. International and national legal and paradigm context. The Ministry of Education and Science of Georgia and the organizations participating in the project prioritize the development and introduction of new methodologies and approaches in order to give the appropriate level of educational rights for disabled children.

Georgia joins and recognizes international documentation concerning the rights of disabled people, such as the Universal Declaration of Human Rights, the Convention on the Rights of a Child, the "UN Declaration on the Rights of Mentally Retarded Persons"(1971), the "Declaration on the Rights of Disabled Persons"(1975), the "Standard Rules on the Equalization of Opportunities for Persons with Disabilities"(1993). In addition, Georgia assumes the responsibility of coming to effective resolutions concerning the issues that appear in the field in question.

On February 13, 2004, the Parliament of Georgia approved the "Main Trends of Social Policy of Protection of Rights of Disabled Children". Based on the above document, the government was assigned to develop concrete implementation strategies.

2. Cooperation. In the past years, the foreign and local non-governmental organizations working in Georgia implemented several projects and initiatives for popularization, maintenance and introduction of inclusive and integrated education.

3. Documentation. The Ministry of Education and Science of Georgia and the organizations participating in the project attribute greater importance to compiling, updating and complex testing of accumulated information, taking into account the results in the process of elaboration of development program of inclusion of disabled children in the general and special educational institutions.

4. Leadership. The lead of the inclusive education pilot project was first undertaken by the Child Care Division. However later it was decided to be exercised by the NCAC, which the Ministry officials considered more fitted for the purpose of strategic approach, together with the overall process of issuing education standards and implementing a national system of quality assurance.

5. Cooperation with MoES departments, synergy. The Child Care Division is assessing, coordinating and monitoring cooperation with NGO's in developing and implementing child-care governmental and ministerial programmes.

6. Related projects. There is another ongoing special education project dealing with educational, attitudinal and social issues of disabled children. The donor from Norway and the division are implementing this project. The project will take place between 2009 and 2011, and consists in policy implementation. The strategic issues are coordinated by Ana Lagidze, special consultant for concept development. Ana Lagidze formed a special working group for this purpose.

7. Inclusive education project objectives. From the inclusive project document, the aim and objectives were extracted and discussed. We consider them to be appropriate, consistent and realistic. The aim of the multidisciplinary team created by the project is “to provide assistance to administration and teaching staff of selected schools in practical realization of inclusive education.”

8. Implementation. For this purpose, specialized staff has been selected by the MoES , the Multidisciplinary Team, trained to coordinate, to implement and to issue operational documents for the inclusive pilot. The areas of qualification are:

No.	Position/function	No of persons employed
1	Special needs education consultant, as team coordinator	1
2	Physiologist	2
3	Speech therapist	1
4	Occupation therapist	2
5	Neurologist	1

The project objectives, as stated in the project document, are:

1. Obtaining and analyzing information on children with disabilities;
2. Contributing to inclusion of children with disabilities into educational process;
3. Evaluating children with disabilities (newly enrolled and already in schools) and defining of their abilities and individual needs;
4. Developing of recommendations for individual educational plans (IEP);
5. Monitoring of the processes at schools;
6. Analyzing of the problem and defining of the ways for their overcoming.

9. Opportunities for replication and further development. We consider the aim and the objectives of the inclusive pilot as leading to appropriate actions to satisfy the needs of disabled children, the system of objectives is coherent and complete, enough general to afford the opportunity of replication at a broader scale. The project contains in embryo a high potential for enlargement and system building at national scale for Georgia inclusive education, as well, the impact of the pilot is to be measured, after consuming most of its effects at all levels: student, teacher, school, broader public education administration. The budget is clear, task oriented and easy to understand, however, some performance indicators stated in the project document and a clear approach to standards in special education is lacking. In order to overcome these shortcomings in the near future, a system of provisory standards for inclusive education should be issued. This system should allow costing and forecasting to be used as economic tools; also it should allow performance indicators to assess the progress and to make corrections.

10. Multidisciplinary team. The MoEs is issuing inclusive education plans. There are some specialists in the project, working on a part time base, because there is not enough time in specialist’s time, although the needs identified by them, on a non-formal, but professional basis, seem to ask more human resources for doing this activity in a better way. The lack of skilled and dedicated human resources – expertise, counselling, care for children for special

needs could be in a measure cushioned, if enough financial resources are allocated (by the Ministry, or other donors) the buy, on a market base, such time for expertise and care.

11. The group for concept and strategic issues about inclusive education is dealing with overall notional and theoretic issues, including legislation, strategic and planning issues. In addition, they will elaborate the project document. The project document will propose different acceptable ways in order for authorities and schools to be able to choose the best alternative and to extend the experience of the multidisciplinary group.

3. Costing methodology for inclusive education

Conclusions and practical issues, based on the economic model:

1. To select schools and local governments together, based on good cooperation and on an written agreement between school and local council, to support some negotiated parts of the school needs (as proposed in the policy recommendation chapter)
2. To involve local communities in consultations with inclusive education schools, on administrative, curricular and financial aspects
3. To be transparent about school development plans, budget and school outcomes. Therefore, a series of indicators should be calculated and made public.

I. Socio-economic background and educational considerations

The process of costing for inclusive education should use not only usual economic tools, but also, a more detailed and insightful view on socio-economic aspects, some psychological considerations and medical ones too. Focusing on different target groups of persons, institutions and on relationships established or wanting to be established among them, we should, first of all strengthen the idea that disability is very often associated with poverty of parents, children's families, social close environment in general of the most frequent cases of disabled.

In this respect, some important considerations about risk factors should be made:

- 1. Poverty of parents** creates a high level of stress and, in many cases, poor living conditions, crowded houses and rooms creates the conditions for home violence, sexual abuse. Competing demands of their lives affects responsiveness to children, level of priority afforded by parents to education and contacts with the school. In many cases, low expectation about children's level of education and schooling outcomes are encountered.
- 2. Endemic and epidemic** diseases affecting children and adults are more frequent than the average.
- 3. Children are affected by illnesses** often encountered disrupted schooling, lack of access to educational, cultural and other goods, lack of space and quiet places for homework and study, lack of support from parents for homework, advice, moral support.
- 4. Schools, teachers and educators in general**, often have low expectations for disabled, lack of responsiveness to various problems that children are facing, have negative

stereotypes about them and their families (sometimes, stigma and religious views are associated), poor school parents relationships.

5. Communities could have poor neighbourhoods with limited local services and facilities (transportation, leisure and sports, health services); this is associated with anti-school peer group attitudes, lack of confidence of education and schooling for success in life, role models

6. Negative outcomes for children, resulted from the associated risk factors action: low self esteem, low capacity of work and learning, high incidence of exclusion, low educational, schooling and life attainments.

Of course, not all these problems should be addressed; it would be unrealistic and ineffective. We will focus on school based resources, but, all the time, we will keep into consideration the following:

- an institutional safety network should be in place, to create a variety of support systems, with various levels of intensity and types of support for disabled
- mentalities and stereotypes about disabled, at all levels, even on higher decision making or political levels, create new risks
- a step by step strategy, realistic and well defined, with clearly defined stages, with all instruments- performance indicators, educational, environmental and cost standards should be put in place, and work effectively, otherwise, no impact measurement, progress or assessment could be done.
- there are big cultural, economic and cultural differences between countries, education systems and general conditions between countries, therefore, all foreign models, even successful ones in their country of origin, should be carefully considered, about their appropriateness and adequacy for Georgia.

II. Costing process

All costing processes start with a careful evaluation of the actual system, conditions and results. A series of theoretical approaches could be done, but, most of them have in common some steps, that are to be described.

1. At the expert level, making a list of all needs that disabled children could have. The list comprises a number of items, using a typology of needs; for this report operational purpose, could be used, on a provisory base, the Pyramid of the needs, of Abraham Maslow, even if arguable. It is simple, robust and many specialists know it. The items of this hierarchy are: physiological, security – shelter, love/belonging, esteem, self-actualization. We will focus only on the first two categories, the others being, mostly, satisfied through social interaction, and not with materials. Some of the social interactions are, although, offered by the specialized personnel, work environment, school organization, etc.

Security, shelter – That means children and students (I will use the only word children, because is more comprehensive, and we deal with all their needs)

This could be splitted into a) **Regular (normal needs) for common children and b) for the disabled** (separately).

We will deal only with the needs of disabled children. These needs could be splitted again, into security needs:

- **At home** - for the moment, is not the case, but very important; because of the short term of this small research, we will deal with this issue indirectly, just focusing the parents and educators.

- **In school**

- *hygiene and sanitation rules respected* (according to the Laws and regulations in force)³

The content of the **Instrument no 1** - expert and school estimation (Tables 1-6) and also of the **Instrument no 2** – survey to identify needs, satisfaction about school resources and activities and willingness to support the school are presented in appendixes.

For this report, specialists from the Multidisciplinary Group realized a series of interviews with teachers and parents of disabled children; the questions were only about material needs, in order to prioritize these needs, because, regular or special teaching are regulated by the Ministry (Laws, regulations). The interviews have been realized by the specialists, in the inclusive pilot schools.

Some descriptive outcomes of the interviews

Schools		
Participant N		17
Participant gender		F
Participants occupation		- Parent – 3 architect, economist, physics - Teacher – 8 - Special teacher –3 - Psychologist – 1
Participant age range		25 – 70 mean – 47
Student age range		8 – 17 mean - 10
Particip ant contribution	yes	7
	no	10
	don't know	0
Area contribution	money	- 30 LARI per month 1 [parent]
	other	- To draw visualization 1 - To coordinate the process 1 - Provide with education materials 1 - To work additionally on the lesson 1 - To work as teacher 3
	care	- as nurse 1 - To pay attention to the children in the corridor 1
no	I know	5
	I can teach	2
	I'm specialist	3
	other	"I know but I'll appreciate new knowledge" "It's already late to re-train me"

4. Economic model to establish priorities in purchasing goods and services for disabled and to estimate the increased satisfaction

Both satisfaction expressed by the children, and the expert opinion of the teachers, psychologists are to be considered when establishing priorities for purchasing, and when realizing budget planning for a longer period, let's say, a year. Increased satisfaction of consumer is an indicator of increased quality, and, in the simplified but pragmatic model we offer hereby, will be the only way to estimate quality.

Another criterion to be used when making budget planning are the legal requirements – many times, unfortunately, the legal requirements are related to environment conditions, hygiene and sanitation, and the expenditures are quite big, conflicting with other simple purchasing, i.e., goods, games, books or other cheaper materials. Again, to avoid these decisions to conflict, upper programmes for investment for disabled, to meet legal requirements, would be better led from upper level than schools (socialised divisions of the MoES, project managers).

In a simple and pragmatic model, we will operate with the identified needs of the students, a series like: $N_1, N_2, N_3, \dots, N_k$.

Children's satisfaction, S , is as well a series, with different number of terms, $S_1, S_2, S_3, \dots, S_p$.

If needs, regularly, are expressed in terms of objects or services, or activities to be done, the satisfaction is more complex, and is expressed, usually, in terms of outcomes, results, intentions, or final stages of actions. Therefore, for a single satisfaction S_i ,

there are at least one or more needs who contribute to that satisfaction.

A distribution of this kind is shown in the next table:

Needs	Satisfaction	Level of satisfaction subsample 1	Level of satisfaction subsample 2	Cost of consumption to acquire items (need) (GEL), moment T	Cost of consumption to acquire items (need) (GEL), moment T'
N_1	S_1	1	3	C_1	C_1'
N_2	S_2	3	2	C_2	C_2'
N_3	S_3	4	5	C_3	C_3'
N_4	..			C_4	C_4'
...	..				
N_k	...	2	1	C_k	C_k'
	S_p	1	1		

The arrows show which satisfaction S is acquired using one or more needs satisfied: for example, learning chess needs an instructor (service), some kit for the game (item) and a room to play (use of assets).

There are **three possibilities** to find out which is the cost per unit of increased satisfaction, meaning the difference between different levels of satisfaction, acquired by different individual, having satisfied the same need

Method 1

The theoretical supposition is the quasi-identity of the individuals, their needs and perception of satisfaction, which is available if the sample is big enough, to smoothen the variations.

Comparing different parts of the sample, if the number of subjects answering the questions is quite large, is possible to see different degrees of satisfaction, for the same item, for the same category of children. For a level of satisfaction, let's say, of 3, $S=3$, are consumed some resources, which means the cost of satisfying the associated needs, until the given moment. The comparison between average levels of satisfaction will give differences, as seen in Formula 1:

$$\Delta S_1 = S_1^2 - S_1^1 \quad (1)$$

Method 2

If the sample is small (less than hundreds of individuals), the variation between individuals would appear, making the method inaccurate. A more accurate method for small samples is to make determinations of satisfaction at different moments of time, on the same individuals, using the same instrument, in the conditions of modifying the level of satisfaction by adding some resource consumption, to satisfy the same needs.

$$\Delta S_1 = S_1^{T2} - S_1^{T1} \quad (2)$$

Method 3

This method produces accurate results then the consumption of a single unit of good is producing saturation, for example: a single ramp for disabled built at the entrance of the school is enough, a single pencil or chess kit used is producing saturation, etc.

In this case, the consumption of a single unit is producing maximum of satisfaction, on a scale from 1 to 5, meaning S_5 and the lack of consumption is producing the minimum satisfaction, S_1 .

$$\Delta C = 5 - 0 = 5 \quad (3)$$

The increase is 5 satisfaction units and the cost is ΔC

The cost to obtain an unit increased satisfaction, in all cases and in all three simplified models, is obtained dividing the variation of cost to number of units of increased satisfaction.

$$\frac{\Delta C}{\Delta S} = \frac{C_p - C_r}{S_p - S_r} = CPU(\text{cost_per_unit_satisfaction_increase}) \quad (4)$$

5. Final discussion and conclusion

No matter the method to obtain the cost per unit of increased satisfaction, satisfaction increase is an indicator of increased quality, satisfaction decrease is an indicator for diminished quality; the satisfaction variation is a tool to manage decision in decision-making bodies, meaning, all conditions being equal, a rational decision making body will opt for a decision to increase at maximum the aggregated satisfaction for all disabled children in the school, and at larger scale, in a Resource Centre, rayon, region and national. This kind of analysis could be used to issue policies in investments, in purchasing goods or services on a scale programmes or to opt for some personnel policies (recommendation to work extra hours, to buy teaching, expert or tuition time from the market, to select providers who produce or deliver packages of goods or service, to compare policies, providers, decision, to adopt unique provider for some goods etc.)

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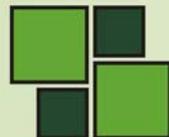
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Appendixes

Instrument no 1 - expert and school estimation (Tables 1-6)

Table 1. Security, shelter needs

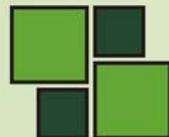
No	Item	Actual situation in the school	Assessed need	Estimated difference between existing and needed (physical units)	Estimated difference between existing and needed (monetary units)
1	Transportation to and from the school	Description, explanatory	Description, explanatory		
2	Materials for mobility/accessibility: transport, ramps, lifts, mobility aids (wheelchairs, walkers, etc) -				



3	free meals	Etc.			
4	special meals (for diseased children)				
5	adapted kitchen utensils (anti-slip, shaped plate, spoon/fork/knife with thickened handles, plastic caps)				
6	Materials for self-maintenance in school: adapted toilets, etc				
7	permanent or partial care taking (for severe disabilities)				
8	other therapies (specialist opinion)				
9	heating, cooling, environment				
10	special assets: access, space, bedrooms, restrooms, individual study rooms etc.				
11	regular and or special furniture: adapted furniture, special chairs and tables				
12	regular or and special learning facilities, premises				
13	special books or manuals, reading materials for children (Braille, audio, etc, special devices for communication in different ways.)				
14	Technical equipment				
15	Stationary				
16	Adapted equipment: key boards, scissors, pans etc.				
17	Material for recreation - games, toys, films, music etc.				
18	Materials for particular child (unique, difficult to predict)				
19	Others, to be detailed				

Table 2. Learning needs

No	Item	Actual situation in the school	Assessed need	Estimated difference between existing and needed (physical units)	Estimated difference between existing and needed (monetary units)
1	regular teachers with special training in				



	disabled children				
2	other types of training for special needs: dislexic, ADHD, other forms of special pedagogy needed, for regular subjects teachers				
3	in service training, school based and financed (or by different donors)				
4	Inclusive/ disabled, education specialists, Therapists, etc.				
5	Others, to be detailed				

Because teaching activities, special therapies, care taking, counseling and guidance are the most important the biggest part of the educational budget, they will be treated separately:

Table 3. Staff

Type of activity	Type of staff (staff means teaching and non-teaching, sanitary, or special aid, care takers, janitors, etc.) <u>needed</u> (To be named the positions and specialties according to the law, when is the case)	Number of hours needed to be worked, by each type of staff	Number of children <u>needing</u> this staff	Actual situation of staff (number of hours they work effectively during a week)	Salaries and other payments, per week, for each staff category

Table 4. Entertainment, extracurricular activities, sports, leisure

No	Item (activity)	Actual situation in the school	Assessed need	Estimated difference between existing and needed (physical units)	Estimated difference between existing and needed (monetary units)
1	Excursions				
	Other entertainment – movies, spectacles				
	Artistic and sporting activities				
	Social activities – community, helping others				
	Others, to be detailed				

Table 5. Activities with the parents and disabled children's families

No	Item (activity)	Actual situation in the school	Assessed need	Estimated difference between existing and needed (physical units)	Estimated difference between existing and needed (monetary units)
1	Regular communication with parents				
2	Special and emergency communication (indiscipline, violence, sickness, etc.)				
3	Parents' education and counselling				
4	Special training for parents having diseased or children with special needs				
5	Others, to be detailed				

Table 6. Synthetic table to establish priorities in materials and facilities, using satisfaction survey; the most simple is to ask teachers or parents about their opinion

Materials, facilities, other items	Existing	Number of children using the materials or facilities	Subjective satisfaction using the materials or facilities, on a scale from one to five: 1-very low, 2-low, 3-medium, 4-high, 5-very high	Number of children actually enrolled, that need to use the materials or facilities	Needed, for a subjective estimated, to produce for children average and high expected satisfaction (two figures, one for ave., one for high)	Estimated costs of purchasing or investment (related to market prices)

Instrument no 2 – survey to identify needs, satisfaction about school resources and activities and willingness to support the school

Questionnaire

1	Which is the thing you are the most satisfied, about material conditions from the schools that your child uses?	Name at least three...1...2.....3.....
	Make a list of three things (materials, facilities) that you think are useful in high measure for your children in school:	1... 2... 3....
3	If the school or other donor are concerned about procurement or investment of the things you want more (materials, facilities), how could you help, from your part, for things to happen?	1. Contribution in money.....estimate..... 2. Contribution in kind.....estimate (work, other materials donated,

