
The effectiveness of applying total quality management in Public Senior High School Kasihan 1 Bantul, Yogyakarta Indonesia

Suleiman Aden Jamaa

Kenyata University, Republic of Kenya

HP:081519499240/e-mail:lemlituny@yahoo.com

Abstract: *The objective-approach evaluation aimed to audit the school effectiveness on the five TQM components of services to students, physical environment and resources, human resource, processes and product(s). The study involved a quantitative method using a standard audit checklist (Sallis, 1998:138). A few modifications were made by dropping few items and grouping the indicators into the five total quality components. The checklist was used in two ways, first, through subjective approach involving the head teacher and 45 sample teachers. Second, by the researchers own objective quantitative observation. The result of the descriptive analysis shows differences in perception rating. The mean average of 3.0+ obtained for the five components items reveals an average perception. The conclusion here is that the five components mean average per component items is within the average effectiveness with slight variation.*

Key words: *school effectiveness, TQM, objective-approach evaluation, total quality components*

1. Introduction

The quality of school graduates and the literacy rate represent the most telling indicators for a country educational status. Today, despite the mushrooming of schools, the continued sensitization of the public on the importance of investing in education, schools are still marked with shortcomings in the quality of learning. These are greatly associated with the continued reliance on the old traditional ways of managing things and the absence of the latest quality management strategies. In order to combat these problems, educational stakeholders have to strive to ensure all systems and practices are aimed at ensuring schools product which fit for their purpose--innovative, efficient and of benefit to the societies. However, these are not always adequately met, particularly in the developing countries hence are still plagued by underdevelopment.

TQM major constant imperative "is a concern for standard achievement" (Sallis, 1993). TQM is identified as one of the best means in effectively achieving educational goals and objectives. However, it has not been widely used in school organization. Even those schools that adopted the TQM practices are still faced with challenges such as absence of a guiding TQM framework, inadequate human resource and resources, lack of leadership, perception of TQM as a program instead of a culture of continuous improvement. So what effective TQM implementation offers is a treatment for these problems by ensuring the creation of quality culture where every member of the school is an instrumental. Juran's rule of thumb (Sallis, 1993:52) says that "85% of an

organization's quality problems lie with management, as they have control over the system of the organization.

In an effort to address the quality challenge and meet the global quality education standard the Government of Indonesia national educational policy (No. 20, 2003) recommends the establishment of model school in the existing primary and secondary schools which has to be based on international education standard. Kasihan 1 Bantul Public High school is among the 100 High schools in the Indonesia identified as a model and a program of international quality standard introduced in the year 2006 (Suyanto, 2007). The school was identified as the only one out of 48 secondary schools in the district implementing the program. It enrolled 960 mixed students and the process of teaching and learning is based on TQM practices as indicated by the school head, so there was a need to evaluate its effectiveness. Evaluation helps in identifying the problems and weaknesses that need to be improved as well as ensuring things are being conducted as planned.

The objective of the research was to audit the school TQM effectiveness on the five components of service for students, Physical environment and resources, Human resource, process and product. In addition, to determine which TQM components are an improvement necessary. Highlight good practice and sensitize on areas where developmental and improvement will be of benefit. Adams, (UNICEF, 2000), presents in an article that the term quality, efficiency, effectiveness, and equity have often been used synonymously, and that considerable consensus exist today about the basic dimensions of quality. He further cited that quality education includes aspects like:

Firstly, learners are healthy, well-nourished and ready to participate and learn, and supported in learning by their families and communities. Secondly, environment is characterized by a healthy, safe, protective, gender-sensitive, and provides adequate resources and facilities. Thirdly, contents are reflected in relevant curricula and materials. Fourthly, processes in which trained teachers use child-centered teaching approaches in well-managed classrooms and schools and skilful assessment to facilitate learning and reduce disparities. Fifthly, outcomes, which encompass knowledge, skills, attitudes, and are linked to National goals for education and involve positive participation in society

Total quality has been defined and explained by several quality gurus in somewhat similar dynamite. For instance, (Crosby1986:99) stated "the first absolute definition of quality is conformance to requirements". The concept of quality as in TQM is relative and this definition makes it not to be viewed as an attribute of product or service but something which is ascribed to it and judged to exist only when an institution's services meets the specifications that has been laid down for. Robbins (2001:15) defined TQM as "a philosophy of management that is driven by the constant attainment of customer satisfaction through continuous improvement of all organizational process". As defined by ISO ([International Organization for Standardization](#)) "TQM is a management approach for an organization, centered on quality, based on the participation of all its members and aiming at long-term success through customer satisfaction, and benefits to all members of the organization and to society." Bunham (1997:32-33) have distilled a representational components derived from the theories and practices of TQM as they might be applied to schools to provide the guiding principles needed for educational reform.

Figure 1. Block Diagram of TQM Components

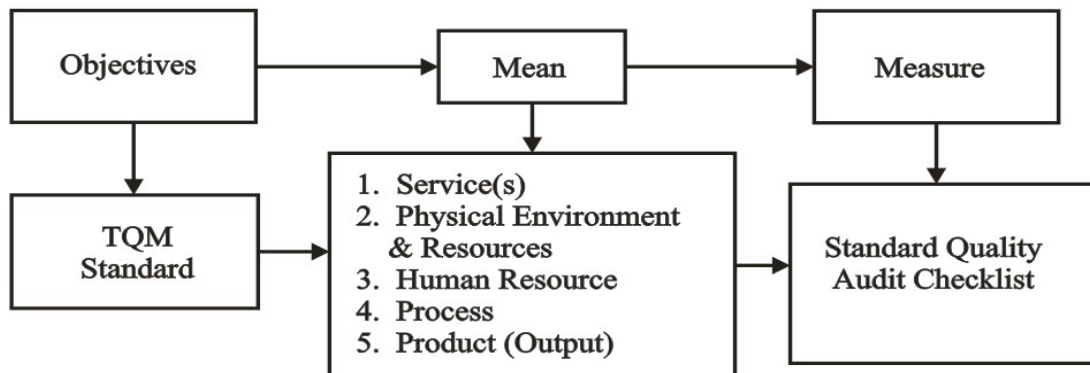


Figure 1. Adapted from *Managing quality in schools: Effective strategies for quality-based school improvement* by Burnham, 1997, p. 32-33. London: Pearson.

Generally, these ideas, principles of TQM by the quality theorist can be grouped in to five components which are customers’ service, physical environment and resources, human resource, processes and product (output).

The conceptual framework used was structured basing on the above components and principles of TQM as well as that of evaluation program three step sequences.

Figure 2. The Conceptual Framework



2. Method

The study took the design of an objectives-approach evaluation. According to (Isaac & Michael, 1982:3) evaluation studies involve two classic paradigms: system approach and objectives approach. This evaluation involved the later and only concentrated on the setting; neither aimed to make generalization nor test hypothesis. It took quantitative research method. The indicators were derived from a standard quality education checklist contained in (Sallis, 1993:39-46). The checklist items were refined by dropping some indicators and grouping them into the five total quality components. The instrument inventor had indicated that “institutions can modify or use it as a basis for devising their own”.

The respondents were required to rate their perception against each item in the checklist. Data was obtained from the principal, 45 purposefully sampled representatives of the School teachers as well as the evaluator’s objective observation and interview

using the same checklist. The evaluator repeatedly observed the School setting especially classroom instructions, physical conditions such as school facilities in order to get valid perception measure on the items evaluated. Also open ended interview was used where appropriate on same categories items.

The data had been collected using quantitative procedure using a standard quality audit instrument that required the respondents to indicate their perception on the School TQM effectiveness by marking on the 1-5 Scale in the checklist. Also the evaluator repeatedly observed and interviewed at appropriate times using the same checklist, in order to have own objective findings on same items in the checklist. The use of this instrument is said to be an excellent step in the path of total quality because, first it is a standard against which institutions can gauge themselves, provides framework for planning and developing, as well as evaluating success and failure (Sallis 93:138). The instrument was employed in two ways. From subjective perception of the school head teacher and a representative sample of teachers as well as through researcher's objective quantitative observation and interview using the checklist.

3. Findings and Discussion

Subjective Findings

The subjects whom data was sought were the school teachers and the principal. Their perception on the school TQM effectiveness on the 1-5 scale in a checklist was analysed.

Averages per Component Items from the Subjective Responses

The averages were calculated for the school principal and the 45 sample of the school teachers. The averages mean and mode results are illustrated in the Tables (1-7) that follow.

Table 1
Averages per Item for TQM Component of Services for Students

No	Component Items	Respondents		
		45 Teachers	The Principal	
		Mean	Mode	Mode
1	Information and guidance service available	3.82	4	4
2	Good rapport between staff and pupils	3.97	4	4
3	Pupils are happy and have sense of pride in their learning	3.51	4	4
4	Range of leisure, recreation & sporting facilities available	3.49	4	4
5	Clean and well maintained toilets	4.07	4	4
6	Absence of artificial barriers	3.35	3	4
7	Open access to learning resources	3.62	3	4
8	Access to computer facilities	3.84	4	4
9	Relaxation facilities available	3.14	3	4
10	Pupils views regularly solicited	3.55	3	4

Table 2
Averages per Item for TQM Component of Physical Environment and Resources

No	Component Items	Respondents		
		45 Teachers	The Principal	
		Mean	Mode	Mode
1	Buildings and classrooms Clean and attractive	3.84	4	4
2	Appropriate visual and learning aids available	3,64	4	4
3	Classroom layouts exciting to pupils	3.36	4	4
4	Learning environment well planned and organized	3.64	4	4
5	Effective resource control exercised	3.57	4	5
6	Health and safety regularly maintained	3.67	4	5
7	Good work rooms	3.53	4	4
8	Appropriate and adequate equipments and facilities	3.59	4	5

Table 3
Averages per Item for TQM Component of Human Resources

No	Component Items	Respondents		
		45 Teachers	The Principal	
		Mean	Mode	Mode
1	Enough teaching staff	4.24	4	4
2	Take responsibility for their own quality	3.84	4	4
3	Respond readily for individual needs	3.73	4	5
4	Strong link with education/parents/business	3.39	3	5

Table 4
Averages per Category Items for TQM Component of Process

No	Component Items	Respondents		
		45 Teachers	The Principal	
		Mean	Mode	Mode
a. Leadership				
1	Head/Principal has vision and shares it	3.98	4	5
2	Head/Principal walks the job	3.98	4	5
3	Head/Principal knows the staff	3.78	4	5
4	Head/Principal provides leadership	3.89	4	5
5	Head/Principal gives quality top priority	4.0	4	5
b. Effective learning				
1	Teaching & learning appropriate to performance outcomes	3.93	4	5
2	Variety of learning modes available	3.73	4	4
3	Teaching & learning strategies regularly reviewed	3.91	4	4
4	Learning is student centered	3.56	4	4
5	Learning guided by theories	3.79	4	5
6	Good climate for purposefulness amongst pupils	3.76	4	5
7	Institutions has formal systems for review and evaluation	3.89	4	5
8	Feedback from other customer groups regularly	3.52	3	4

	obtained			
9	Feedback used in decision making student	3.66	4	5
10	Encouraged to take responsibility for their own learning	3.73	4	5
c. Team work				
1	Committed to teamwork and team approaches	3.56	4	4
2	Value and support good practice	3.64	4	5
3	Have strong cohesion	3.66	4	5
4	Have been trained on in skills of team work	3.55	4	4
5	Have been trained on in skills of team work Regularly consulted on policy	3.62	4	5
d. Organization				
1	Strategic planning done	3.80	4	5
2	The school has clear mission statement, goals & objectives	4.00	4	5
3	School culture based on team work	3.56	3	5
4	Good and bottom up communication	3.62	4	5
5	Staff at all levels are aware of direction	3.71	4	5

Table 5
Averages per Item for TQM Component of Product

No	Component Items	Respondents		
		45 Teachers		The Principal
		Mean	Mode	Mode
1	Excellent exam result and students successes	3.84	4	5
2	Caring atmosphere maintained	3.76	4	5
3	Students welfare a priority	3.60	4	5
4	Effective use of resources	3.69	4	5
5	Effective budgetary control	3.68	4	4
6	Commitment to learners of all abilities	3.71	4	4
7	Good students and community feed back	3.66	4	5

School TQM Components Percentages

The percentage effectiveness was calculated for the subjective as well as the evaluator's objective findings. The tables 9 and 10 below explains the percentages rating, the frequency for each perception rating as well as the total percentage for each component as held by the 45 sample teachers and the principal respectfully.

Table 6
Components Percentages from Teachers Rating

Categories	Standard	Below			Good	Excellent	Total
		Poor	average	Average			
Services for Students	Frequency	6	20	146	222	46	440
	Percentage	0.27	1.78	19.47	39.47	10.22	71.2%
Physical environment and Resources	Frequency	3	16	115	205	16	355
	Percentage	0.17	1.78	19.17	45.56	4.444	71.1%

Human Resource	Frequency	0	5	46	105	21	177
	Percentage	0	1.11	15.33	46.67	11.67	74.8%
Process	Frequency	6	30	303	670	106	1115
	Percentage	0.05	0.53	8.08	23.82	4.711	37.2%
Products	Frequency	1	11	89	189	22	312
	Percentage	0.03	0.7	8.476	24	3.492	36.7%

The percentage rating per component indicates the variable category of human resource as the highest rated by the teachers with a percentage of 74.8%, followed by services for students as 71.2%, then, physical environment and resources with 71.1%. On process and product variables the percentage effectives resulted in 37.2% and 36.7% respectively.

Component Percentages from the Principal Rating

The table below shows the percentage rating for each component as held by the principal. The principal perception was aimed to capture the management approval because it's principal who has the responsibilities over anything that go wrong in the implementation of the TQM program as well the general school teaching and learning success or failure.

Table 7
Components Percentages by the Principal Rating

Components	Standard	Good	Excellent	Total
Services for Students	Percentage	72	10	82%
Physical Environment and Resources	Percentage	50	37.5	87.5%
Human Resource	Percentage	40	50	90%
Process	Percentage	9.6	38	47.6%
Products	Percentage	11.4	35.7	47.14%

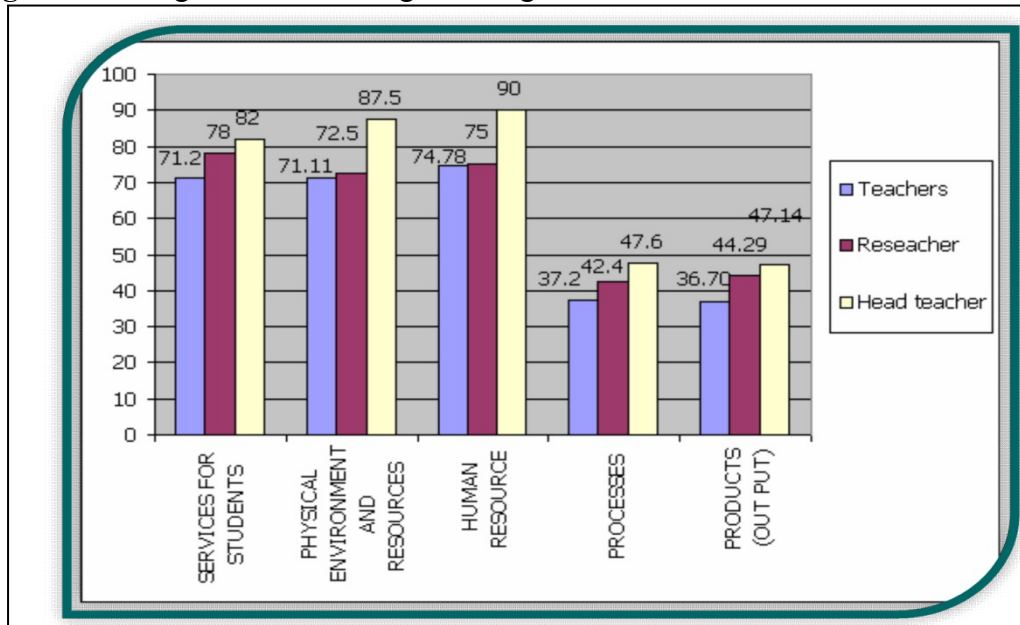
Objective Findings

The researcher had interviewed various school customer groups especially the pupils on the same items on the checklist. The reason was to obtain their oral reaction which complemented the observation. The percentage result of the researcher' quantitative rating is given in the table below.

Components	Standard	Average	Good	Excellent	Total
Services for Students	Percentage	6%	72%	-	78%
Physical Environment and Resources	Percentage	23%	50%	-	73%
Human Resource	Percentage	15%	60%	-	75%
Process	Percentage	1%	27%	14%	42%
Products	Percentage		23%	21%	44%

Table 8
Components Percentages from the Evaluator

Figure 3. Histogram on Percentages Rating



The histogram above illustrates the percentage ratings by the three different evaluators against the corresponding TQM components percentages. It can be deduced that the percentage rating by the teachers indicates the component of human resource with 74.8%, followed by services for students as 71.2%, then, physical environment and resources with 71.1%. On process and product, the percentage effectiveness results in 37.2% and 36.7% respectively. As for the principal, the perception results in almost similar trend but at a higher rating with services for students being 82%, physical environment and resources scored 87%, process and product (output) are least at 47.6% and 47.2% respectively. Finally, the researchers' quantitative objective rating reveals a somewhat similar trend rating but with variation on the percentage ranking. The component of services for students is highest at 78%, followed by human resource at 75%, physical environment and resources at 73% and the least rated are the categories of process and product at 42% and 44% respectively.

The school TQM effectiveness was evaluated on the five TQM components of services for students (the primary customers), physical environment and resources, human resource, process, and product.

Firstly, on the TQM component of **services for students**, this is what quality gurus also called the principle "customer focus". The result of the subjective findings from the school principal and the 45 purposeful of teachers sample had indicated as follows:

The average rating per component items by the teachers were generally effective at a mean of 3.0+ with six of the ten items having a mode of 4 which was very effective perception. However, four items which evaluated on cleanliness and maintenance, absence of artificial barriers, availability of relaxation facilities, and whether students' views are solicited were rated at a mode of 3 which means these variables items are within effective performance. On the percentages it was 71.2% which means the component was generally perceived as very effective. Concerning, the result by the principal, a somewhat similar rating was obtained which was impressive because all the items in this category had a mode of 4; an effective perception. However, one item which tested whether there existed good rapport between the school staff and the students was rated very effective (a mode of 5). The mean perception of 3.0+ indicated an effective approval as had been assumed in the criteria. The percentage too stressed that having

shown 82%; a very effective indication.

Likewise, the evaluator's perception resulted in almost similar trend but with a bigger percentage of 78% which indicated the category was very effective. Moreover, it was noted that focus on learners' interest is one of the major primary objectives of the school which was indication of their commitment in ensuring the effectiveness of this major TQM component. Learners' being the primary customers in the school, their interest is imperative and should be central in the teaching learning process. If learners are happy and have a sense of pride in their learning, consequently, their performance and attitude will certainly be improved. In short, it's important to realize that the school performance was found to be very good on this category.

Secondly, physical **environment and resource**, the subjective results by the sample teachers and the principal revealed an effective and very effective perception of 71.1% and 87.5% respectively. All the items under this category were rated at a mean of 3.0+; meaning an effective rating. The mode fell at 4.0 for all the items by the teachers' checklist. Regarding the principal perception rating, the mode was 4 and 5 meaning very effective perception, for the evaluators' objective inquiry, the category was rated at 73%. The average ranged between 4 and 3; meaning very effective and effective perception respectively.

Since learning outcomes is generally dependent on the school quality learning environment and the physical elements indirectly contribute to learning effectiveness. It was notably clear that the quality of school buildings and the condition of the learning environment was conducive and kept clean and tidy. The classroom management was attractive and learners could be seen engage in friendly and thought provoking learning discussions. Also factors such as space, seating arrangement, noise, and class size were controlled with the principal managing by walking around.

Thirdly, **human resource component**, the result from the subjective responses indicated that the school human resources was generally very effective and effective with a percentage of 74% by the sample teachers and 90% by the principal. The evaluators' objective perception further complemented that with 75% result. Furthermore it was impressive to note that the school had a very skilled teaching staff because a good number were found to have a university degree with eight out of 86 holding masters' degree level. The school teaching staff demonstrated good morale, as a suggestion that staff development and motivation was promoted and remain central strategy in the instructional improvement. Also, the principal seemed to have the confidence in that the teachers have the necessary skills and professionalism that will enable them accomplish the instructional objectives as well as the general strategic plans of the school. As a sign of continuous human resource competence the teaching instructions were developed in accordance with the National education curriculum and guided by TQM principles and objectives. The principal was seen to be consultative and delegated part of the managerial duties to the deputy and departmental heads. Moreover, other personnel like administrative, security, ground men and PTA representatives have their offices in compound and remained active.

Fourthly, **process**, the result from the subjective data indicated that the teachers' perception rating was at 37.2% which is below effective performance. The principal perception was 47.6%, meaning a somewhat effective rating. On the objective findings the percentage was 42%, a somewhat effective rating as in the result by the principal. In fact this result indicated that the school needed to do more on process which in this case consist of categories like leadership, effective learning, team work and organization. However, the school was noted to be excellent in academics an indication that the effective learning as a TQM category of process can said to be effective. Therefore, the

rationale on the low perception was due to what was evaluated under process component that not only sought for effective learning category but also other TQM categories of the leadership, teamwork, and organization effectiveness. Juran's rule of thumb (Sallis 1993: 52) says that "85% of an organization's quality problems lie with management, as they have control over the system of the organization.

Finally, **product (Output)**. The services, the environment and resources, human resource, process that are provided in school lead to myriad results, for instance standards achievements, learners' entry behaviors in the subsequent level. The school TQM product component was evaluated on a seven item which included examination excellence and students success. The average rating by the sample teacher gave a percentage rating of 36.7%. The perception rating by the principal was 47.14%, while the evaluators' objective inquiry indicated 44%. In short, the component of product received a somewhat effective perception rating from the principal and the evaluator and not effective from teachers sample. However, an interview with principal indicated that the school was effective in the performance in the National examination because its is ranked no 1 in the district in terms of academic output as indicated by the teachers as well the principal. Therefore, this evaluation result of a somewhat effective by the principal and not effective by teachers should not be construed that the school was poor in examination performance but the general perception was as the result of the of product variable items which were sought consisted of seven items of which examination output being only one it.

4. Conclusion

The study evaluated the effectiveness of applying TQM in senior Public High School Kasihan 1 Bantul, Yogyakarta. The results showed a differing perception on the five TQM components effectiveness as concluded below.

- a. The component of services for students was perceived to be very effective by the principal and the researcher. Whereas the result from the 45 purposefully sampled teachers showed it to be effective.
- b. Physical environment and resources was effective from the teachers' sample. While the school principal and the researcher results indicated as very effective approval.
- c. The school human resources as indicated by the principal were very effective. The sample teachers and the evaluators' objective perception revealed an effective rating.
- d. The school process management was perceived as not effective by the teachers and a somewhat effective by the principal and the researcher.
- e. The component of product was perceived as not effective by the sample teachers. The principal and the evaluators' perception indicated somewhat effective approval.

Recommendations

The evaluator hoped that the results of this research will serve to highlight good practice and sensitize on areas where improvement will be of benefit.

- a. Focus on customers' interest is one of the major components in TQM. In these case students being the primary customers in the school their interest should be central and be continuously improved.
- b. The school physical environment & resources must be developed, maintained and effective resource control exercised
- c. Schools have management staff, teaching staff, subordinates staff, PTA, BOG and other stake holders who are involved in the development of the institution

objectives and strategic goals, therefore strong link and partnerships should be exercised to improve further.

- d. The school should always seek to continuously improve the leadership and ensure teamwork, effective learning and organization. The teaching and learning process have to be guided by TQM models and evaluation carried out on all aspects especially classroom process.
- e. The school should continue on process improvement in order to enhance product. Other TQM product variable items such effective resource and budgetary control should be effective so as to improve the output and outcome. However, academic output is very effective as indicated by the subjective respondents.

References

- Burnham. (1997). *Managing quality in schools: Effective strategies for quality-based school improvement*. London: Pearson.
- Crosby. B.P. (1999). *Quality without fears: The art of hassle-free management*. Belmont: McGraw co.
- Isaac, S., & Michael, W.B. (1983). *Handbook in research and evaluation: for educators and behavioral sciences*, 2nd edition. California: Edits Publishers.
- Suyanto. (2007). *Sistem penyelenggaraan sekolah bertaraf internasional*. Jakarta: Dirjen Mandikdasmen Depdiknas.
- Robbins. P.S. (2001) *Organization behavior*, 9th edition. San Diego: Prentice Hall International, Inc.
- Sallis, E. (1993). *Total quality management in education*. London: Kogan Page Limited.
- Undang-Undang Republik Indonesia Nomor 20 tahun 2003 tentang Sistem Pendidikan Nasional. Jakarta: Depdiknas.
- UNICEF. (2000). Defining quality in education. *Working paper series*. New York: Education Section Program Division, USA.