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SRI LANKAN JOURNAL OF EDUCATIONAL RESEARCH

Educational research has been used as a scientific endeavour to solve educational problems. This journal promotes educational research and disseminates research knowledge to enable educationists to take informed decisions towards improving the quality of education.

Its aims are

1. to promote and encourage original critical investigation of issues relevant to educational development in Sri Lanka;
2. to disseminate research findings to educational policy makers; planners and practitioners within Sri Lanka as well as internationally;
3. to provide a forum for the interaction of ideas and discussion of research findings.

The Journal contains articles which are the products of educational research based on issues and problems related to the educational system in Sri Lanka.

Notes for Contributors

1. Papers prepared in English, Sinhala or Tamil on research undertaken in education are considered for publication.
2. Papers should normally be between 2,000-10,000 words and be submitted with an abstract of not more than 200 words. Short articles on current research are also considered for publication as Research Notes.
3. Manuscripts must be sent in duplicate typed double spaced on A4 paper, on one side of the sheet only.
4. To ensure anonymity, only the title should appear on the manuscript. Attach a cover page with title, name and affiliation.
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Research Study on the effectiveness of Learning Pure Mathematics Using Different Types of Instructional Materials

G. S. Algama, W. A. R. Wijeratne, B. Weerasinghe and H. Somadasa
Open University of Sri Lanka

ABSTRACT

This paper focuses on effectiveness of instructional materials such as non-stop print (non-interactive), non stop video (non-interactive), stop-work-start print (interactive) and stop-work-start video (interactive) lessons that were developed and implemented in the teaching of Pure Mathematics at the Senior' Level (General Certificate of Education Advanced Level) in Sri Lanka.

This paper examines (i) whether instructional materials such as non-stop print, non-stop video, stop-work-start print and stop-work-start video are effective as self learning materials and (ii) whether there is any significant difference in the performance of students who study through non-stop print and stop-work-start print as well as nonstop video and stop-work-start video.

In non-stop learning (non-interactive learning) each learner learnt instructional print or viewed instructional video continuously and at the end of reading or viewing he/she was directed to answer a question paper-based on the instructional material. In stop-work-start learning (interactive learning) each instructional lesson (instructional print/video) was divided into three segments and the learner learned segment by segment. After learning each segment he/she answered three questions based on that segment. Finally, he/she received corrective and confirming feedback for his responses. At the end of stop-work-start learning activity he/she was directed to answer a question paper based on the instructional lesson.

Two sample 't-tests' were used to compare the effectiveness of stop-work-start print (interactive) and non-stop print (non-interactive) as well as stop-work-start video (interactive) and non-stop video (non-interactive) and they indicated a significant difference; Therefore, these results suggested that knowledge acquired by means of stop-work-start (interactive) print was more effective than non-stop (non- interactive) print and that stop-work-start (interactive) video was also more effective than non-stop video.

Introduction

Examination statistics for performance in mathematics at the G. C. E. Ordinary Level and G. C. E. Advanced Level examinations in Sri Lanka reveal a low success rate. In 1997, the national mean mark in mathematics at the G. C. E. (O.L.) examination was 27.66%, while that for Pure Mathematics at the G. C. E. (A.L.) was 34.27% (Evaluation Report, Department of Examination of Sri Lanka 1998).

According to an international study on achievement in mathematics, the mean mathematics marks for different countries were found to be below 25% (Husen 1967).

The reasons for the poor performance in the subject was thought to be multifaced. 'Nature of the subject, logical, conceptual and structured nature of the content; low level of intellectual ability of learners, deficiency in teaching and learning techniques, deficiency in instructional materials -were among such factors. Could newer medial applications contribute to the enhancement of learning of mathematics?

In Sri Lanka there is little published research on learning mathematics. Algama et.al. (1996), in a study which compared different media components to teach mathematics, reported that there was a significant difference in the performance in Pure Mathematics between the face to face component and video.

However, no significant differences in learning effectiveness were observed between face to face and print or print and video.

The research findings surfaced the need for further research into the effectiveness of different media components for the study of mathematics in the Sri Lankan context. This paper reports the outcome of such a study which examined the effectiveness of learning Pure Mathematics through non-interactive print, non interactive video, interactive print and interactive video by G. C. E. Advanced Level students.

The objectives of the research study were (i) to identify the effectiveness of learning mathematics through four types of instructional learning materials (self learning)

namely non-interactive print, non-interactive video, interactive print and interactive video and (ii). Whether there is any significant difference in the performance of students who study through non-interactive print and interactive print as well as non-interactive video and interactive video.

Methodology

To accomplish these objectives two sets of teaching/learning material were tested in the G. C. E. Advanced Level classes.

Participant Profile

The study was limited to the students studying in the Mathematics Stream in the G. C. E. A.L. (Grade 12) classes.

The age of the participants varied from 17 to 18 years. It was assumed that there was parity in the level of their knowledge of mathematics, as all participants had obtained credit passes in mathematics at the G. C. E. Ordinary Level examination. However, students had not covered the subject matter related to the content of this research study in their classes prior to this experimental situation.

Learning Technology

- (i). Non-stop interactive learning- in this situation each learner reads instructional print or views instructional video continuously and at the end of reading or viewing he/she is directed to answer a question paper based on the instructional material.
- (ii). Stop-work-start (interactive) learning - in this situation each instructional lesson (Print/Video) is divided into three segments, and the learner learns (Reads/Views) segment by segment. After learning each segment he/she answers three questions based on that segment. Finally, he/she receives corrective and confirming feedback for his/her responses. At the end of stop-work start learning he/she is directed to answer a question paper based on the instructional material.

Subject Area

Selection of subject areas for the study was confined to the subject matter of ‘Limits and Differentiation’ and ‘Straight line’. This was based on the Chief Examiner’s Report for Mathematics at the G.C.E. Advanced Level (1985 to 1988) which indicated that performance in these subject areas were low despite being the most preferred by students.

Sample of Schools

National Schools in the Western province were selected based on the practical feasibility of conducting the study.

The reason for selecting National Schools was that they conduct Science and Mathematics streams in the G.C.E. Advanced Level curriculum. The sample included twelve National Schools selected from three educational districts namely Colombo (6 schools), Gampaha (4 schools) and Kalutara (2 schools) using the simple random sampling technique.

Sample Size

Non-stop (non-interactive) print Vs Stop-work-start (interactive) print The total sample for the non-stop and stop-work-start print consisted of two hundred and forty eight students (248).

Using the systematic random sampling technique one hundred and twenty two students (122) were asked to learn through non-stop print and one hundred and twenty six (126) learned through stop-work-start print.

Table I below shows the gender ratio of participation.

Table I: Gender ratio of the sample for print components

Instructional material	Male	Female	Total sample
Non-stop print	60	62	122
Stop-work-start print	62	64	126

Non-stop (non interactive) vs Stop-work-start (interactive) Video

Two hundred and twenty three (223) students constituted the sample for the non stop (non-interactive) and stop-work-start video. Using the systematic random sampling the group was divided into two. One hundred and twelve (112) students learnt through non-stop video (non-interactive) while one hundred and eleven (111) students learnt through stop-work-start video.

The gender ratio of the group is given in Table II.

Table II: Gender ratio of the sample for video components

Instructional material	Male	Female	Total sample
Non-stop Video	59	53	112
Stop-work-Start Video	55	56	111

Learning Procedure

The Categories of Instructional Material

Non-stop print: A lesson in print on 'Limits and Differentiation' was given. The group was allowed to study without interruption.

Stop-work-start (interactive) print: The same content was divided into three activity at the end of each segment. The students had to answer five questions based on the respective segment. Immediate feedback (in print format) was provided at the end of each learning activity (by the researcher).

Non-stop (non-interactive) video: The non-stop video, (non-interactive) which consisted of a 25 minute lesson on the Straight Line, was viewed non-stop by the group.

Stop-work-start (interactive) video: In this situation the same content was divided into two segments.

At the end of each segment, the study group carried out an activity which consisted of five questions based on the relevant segment. Immediate feedback was provided at the end of each learning activity.

Evaluation Tools

Pre-test and post-test strategy was used to assess the quantum of learning (Brahmawong; 1989). The same question paper was used for pre-test as well as post test Essay type question papers were developed for pre-evaluation of students' existing knowledge and post evaluation of non-stop and stop-work-start learning respectively

Each test consisted of five questions and the total maxi score for each test was 100. Time allowed for each test was twenty five minutes.

Pilot Study

Pre and Post tests were pre tested to ensure the validity and reliability of questions and adequacy of time. All learning activities both print and video were also pre tested before administration through a pilot study to ensure the appropriateness of subject matter and adequacy of time.

Administration of Evaluation Tools

For pre evaluation of students' existing knowledge a pre-test was administered immediately before learning activities.

The post-test was administered immediately after learning activities.

The Experimental Situation in Learning

Non-stop stop-work-start print: The time allocation for the non-stop print and the stop-work-start print the same. Thus the time allowed for the 'nonstop print' group was forty five minutes and the time allowed for 'stop-work print' was also forty five minutes. For the stop-work-start print three learning activities were implemented. The time allowed for the first activity was only nine minutes. But twenty minutes were allowed for the second activity as this was more difficult than the previous one. Time allowed for activity three was sixteen minutes, because there was less subject matter in this segment than in activity two.

Non-stop and stop-work-start video: The non-stop video (non-interactive) which worked non-stop consisted of a 25 minute lesson and stop-work start video that consisted of two stop-work-start learning activities.

The time allowed for the first activity was only 11 minutes. But 14 minutes were allowed for the second activity as the latter part was more difficult than the former one.

Results

Print Media

Analysis of Pearson's Correlation Coefficient between the pre-test and post-test scores yielded a correlation coefficient of +0.47 for non-stop print (non-interactive) and + 0.40 for stop-work-start (interactive) print. These results suggested a positive correlation between previous knowledge and the acquired knowledge. Stop-work-start (interactive) print yielded a mean score of 44.3 which was higher than non-stop print score of 36.4.

Two sample 't-tests' (independent samples) were used to compare the effectiveness of stop-work-start print (interactive) and non-stop print (non-interactive) and they indicated a significant difference (p value= 0.0009).

Therefore, these results suggested that acquired knowledge by means of stop-work- start print was more effective than that of non-stop print.

Video Media

Analysis of Pearson's Correlation Coefficient between pre and post scores yielded a correlation coefficient of +0.77 for non-stop video and +0.42 for stop-work-start video indicating that measurable learning had been achieved. Stop-work-start video yielded a mean score of 39.6, while the non-stop video gained a score of 33.3

The two-sample tests' were used to compare the effectiveness of stop-work-start video and non-stop video and they indicated a significant difference (p value was 0.00). Therefore, these results suggested that the stop-work-start video was more effective than the non-stop video.

Discussion and Conclusion

Analysis of Pearson's 'Correlation' Coefficient between the pre-test and post-test scores suggested there 'was a positive correlation between previous knowledge and the acquired knowledge for all instructional technologies.

Stop-work-staff print yielded a mean score of 44.3 which was higher than non stop print-score 36.4 and stop-work- start video yielded a mean score of 39.6, while the non-stop video gained a score of 33.3.

Furthermore, results of two sample 't-tests' suggested that acquired knowledge level by means of stop-work-start print was more effective than that of non-stop print while stop-work-start video was more effective than that of non-stop video. These findings suggest that the instructional materials such as non-stop print, stop-work-start print, non-stop video and stop-work-start video are effective as self-learning materials.

Also, stop-work-start learning (interactive) may produce significantly higher learning than non-stop learning, irrespective of the media component used.

Hannafin (1985), observed that questions appearing periodically in an interactive lesson can increase attention and subsequent learning. Immediate feedback also helps to motivate the learner (Brahmawong, 1989). Interactivity appears to have a strong positive effect on learning (Bosco, 1986, Fletcher 1989, 1990).

Ragan (1992), reported greater learning resulting from higher levels of interactivity. This work is still in progress for Applied Mathematics.

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A Study of Problems Encountered in Gaining Admission to the University from the G.C.E. Advanced Level Bio- Science Stream

S. Rupasinghe

Faculty of Education, University of Colombo

ABSTRACT *An analysis of the result of the G. C. E.. A/L examination reveals that genderwise disparities in achievement exist with respect to admission to the universities. The present district quota system in admitting students to the universities although acceptable as long as the provision of equal educational opportunities remains unfinished is questionable from the meritocratic point of view demanding a more reasonable policy for all.*

Introduction

Bio- science stream assumes great importance among the subject streams selected by the G.C.E. Advanced level students in seeking admission to universities. Selections to the faculties of Medicine, Dental Science, Veterinary Science, Agriculture and Science are based on the Biological Science stream.

In 1992 out of a total population of 10,042 schools, A/L Science was taught in 530 schools or 5.28% of the schools. Their distribution according to district was 60 in Colombo, 44 in Gampaha, 41 in Jaffna and 40 in Kandy - the leading and advantageous district compared to Kilinochchi (4), Mannar (7), Mullaitivu (4), Polonnaruwa (6) and Moneragala (5) - the poor and disadvantaged districts as far as teaching of A/L Science was concerned (1992 school census).

During the same year (1992), 1625 graduate teachers and 1535 graduate teachers had been deployed to teach Physical Science and Biological Science respectively in school which offered Advanced Level Science. According to the Geographical distribution of these teachers, Colombo, Jaffna, Kurunegala, Gampaha and Kandy districts stood in a relatively advantageous position compared to Kilinochchi, Mannar, Mullaitivu, Vavuniya, Moneragala, Polonnaruwa and Nuwara Eliya districts which were existing in a deprived state (school census 1992).

Considering the availability of schools and the deployment of teachers, the opportunity for Science education at the G.C.E. A/L varied quite extensively. In addition to the disparities existing among districts, there were considerable disparities among schools within the same district.

A total number of 29,179 offered Science (both Physical and Biological) in 1992 and out of this 15,117 or 52% were male while 14,002 or 48% were female students.

Gender Disparities that Exist in the Bio-Science, Stream at University Entrance Level

It has been revealed that in the Bio-Science stream more female students get the total minimum aggregate of 180 or more required to qualify for admission to the university at the G.C.E. A/L but at the point of selection more male students get actually admitted to university. Table I below, depicts this situation over a number of past years.

According to Table I, even though a greater number of female students had qualified to enter university, among those admitted, the greater percentage had been males. The gap between male - female percentages which was 7.2% for 1987-88 had increased to 9.4% in 1993-94.

Table I: Bio-Science stream students qualifying for admission and number admitted with percentages - Genderwise

Academic Year	Students qualifying		Students admitted		Percentage	
	Male	Female	Male	Female	Male	Female
1987-88	2614	3508	806	828	30.8	23.6
1988-89	3197	4190	841	777	26.3	18.5
1989-90	3215	4009	908	862	28.2	21.5
1990-91	3611	4374	1260	1241	34.9	28.4
1991-92	3473	4443	1178	1195	33.9	26.9
1992-93	3664	4412	1050	894	28.6	20.3
1993-94	4051	4863	1081	842	26.7	17.3

Source : Statistical hand books 1991-1995, University Grants Commission

Indraratne and Kottahachchi who had studied this aspect in 1993 found that during the ten year period from 1981- 82 to 1990-91 out of the male students who qualified 29. 18% had entered university on an average while the corresponding figure for females was 21.16%. Indraratne and Kottahachchi interpreted this difference as a result of the disparity in achievement between males and females. Their interpretation was based on the raw aggregate marks, percentiles and quartiles.

Table II gives the achievement disparities for males and females based on the above analysis.

Table II: Comparison of raw aggregate marks for qualifying male and female students based on percentiles and quartiles Bio-Science stream

	1988-89		1989-90		1990-91	
	Male	Female	Male	Female	Male	Female
99%	304	292	279	283	315	300
95%	276	270	270	262	287	277
90%	263	254	257	248	272	263
Q3	239	233	233	228	245	239
Q2-Median	213	210	210	207	218	214
Q1	195	194	193	191	198	196

Source: Indraratne, A. D. V. de S. and Kottahachchi, B. D. (1993). University Grants Commission.

The Indraratne and Kottahachchi study also revealed this disparity in achievement between males and females across other subject streams - Physical Science, Arts and Commerce and across education districts as well. Their conclusion was that even though a large number of female qualified with the minimum total aggregate, the total achievement levels of female being low they clustered around a lower level unable to clear high cut off marks for entry into different faculties in the Science stream. They also attributed this difference in achievement to socio-cultural practices and expectation levels of parents.

The above study had clearly established that even though a large number of girls qualify by clearing the minimum qualifying mark most of them have failed to enter university by clearing the high cut off points established for different faculties because of low achievement. Therefore it is pertinent to ascertain the reason for the low achievement levels of females when compared to males. In the Bio-Science stream the students have to offer the four subjects - Physical Agriculture, Chemistry, Botany and Zoology. Do female students fare badly in all four subjects or do they achieve low grades in certain subject areas only? To enquire into this aspect of the problem Jayaweera, and Rupasinghe, undertook a study in 1996.

The main objectives of the Jayaweera and Rupasinghe study was to compare the achievement of males and females according to subject areas. Students who sat the G.C.E. A/L in 1992 and were to gain admission to universities for the academic year 1993 - 94 in the Bio - Science stream, were selected as the subject of this study. The analysis was earned out taking into consideration the number of students who applied for entry into universities, the number selected and the grades they had obtained in the relevant subjects at the G.C.E. Advanced Level examination. Table III gives the basic statistics for the year concerned.

Table III: Bio-Science stream 1993-94
Number seeking admission and number admitted

Applicants		Admitted		Percentage	
Male	Female	Male	Female	Male	Female
2139	2339	1331	1103	62.2	45.9

Total number qualifying	8914 - Females	54.5%
Total number of applicants	4538 - Females	52.8%
Total number admitted	2434 - Females	45.3%
Total number of female applicants	2399 - Admitted	45.9%

Gender Differences in Achievement by Subject

Achievement by gender in Physics is given in Table IV- those selected and those not selected for universities in the Bio-Science stream.

Table IV: Physics differences in achievement between males and females Selected and not selected - 1993 -94

Selected students

Grade	Male	Female	%	%
A	89	18	7.15	1.75
B	270	156	21.69	15.13
C	684	621	54.93	60.13
S	197	234	15.83	22.69
F	5	2	0.40	0.20
Total	1254	1031	100.0	100.0

Not selected

Grade	Male	Female	%	%
A	-	3	-	0.26
B	17	5	2.41	0.43
C	302	346	42.78	30.06
S	370	746	52.40	64.81
F	17	51	2.41	4.44
Total	1254	1031	100.0	100.0

Source: University Grants Commission

As the data in reveal, Out of the selected candidates 28.84% males have scored A and B passes in Physics compared to females whose percentage was 16.88. This accounts for a difference of 12% in securing high grades in Physics. Among students who have not been selected 45.19% males have B and C passes compared to females whose figure was 30.49 percent Again, among students who have not been selected, more girls have got S passes and f the percentage being 69.25.

Considering the applicants as a group, 376 males have A and B passes while only 182 females have reached that level. Among 1951 male applicants 19.3% have secured A and B grades while among 2182 female applicants only 7.8% have reached A and B grade level. This accounts for a difference of 11.5% between the two groups.

The analysis of data thus reveals that males have fared better in Physics and their higher performance in Physics influences the total aggregate mark.

Table V gives an analysis of the grades scored by the two groups of students - male and female, in Zoology.

Here, out of the selected students 19.09 per cent males have obtained A and B grades while the comparable figure for females stands at 16.77 per cent - a difference of 2.32 per cent. Again, among the students who have been successful in getting selected, 83.23% females have scored C and S passes while the figure for males was 2.3% less.

The grades scored in Zoology by males and females differ significantly among students that have not been selected.

Taking the applicants as a group, out of 2139 male applicants 264 or 12.34 per cent had obtained A and B grades in Zoology. Among 2399 female applicants only 200 or 8.33 per cent had scored A and B grades. Even in Zoology, though the difference is not as marked as in Physics, males have obtained higher grades than females and the difference in favour of males is 4 per cent.

Table V: Zoology Differences in achievement between males and females-selected and not selected - 1993-94

Selected students

Grade	Male	Female	%	%
A	11	3	0.83	0.27
B	243	182	18.26	16.50
C	945	823	70.99	74.61
S	131	95	9.84	8.62
F	1	-	9.84	8.62
Total	1331	1103	100.00	100.00

Not selected

Grade	Male	Female	%	%
A	-	-	-	-
B	10	15	1.24	1.16
C	517	840	63.99	64.81
S	279	435	34.53	33.56
F	3	6	0.24	0.47

Source: University Grants Commission

The achievement levels of males and females in Chemistry is given in Table VI.

Table VI: Chemistry - Differences in achievement between males and females - selected and not selected - 1993 - 94

Selected students

Grade	Male	Female	%	%
A	264	3	0.83	0.27
B	503	482	37.79	43.70
C	474	402	35.61	36.45
S	85	53	6.39	4.80
F	5	4	0.38	0.36
Total	1331	1103	100.00	100.00

Not selected

Grade	Male	Female	%	%
A	6	5	0.74	0.39
B	79	132	9.78	10.19
C	470	755	58.17	58.26
S	235	374	29.08	28.86
F	18	30	2.23	2.30
Total	808	1296	100.00	100.00

Source: University Grants Commission

In Chemistry out of the selected students 264 males or 19.83 per cent have scored A passes and the comparable figure for females had been 162 or 14.69 per cent - a difference of 5.14 per cent in favour of males. When A and B grades are combined, in the group of students who have been selected 58.39% of the females have scored the combined grades compared to males whose percentage stand at 57.62, a difference of 0.77 in favour of females.

In the group of students who have not been selected to the universities, the difference in the percentage of A and B grades scored between males and females stand at 0.06. But when A grades are taken alone males have an advantage over females by 0.35%.

Among male applicants 852 out of 2139 or 39.8% have secured A and B grades while only 781 females out of 2399 or 32.5% have been among high grade achievers. Males have obtained more A and B passes in Chemistry (A difference of 7.3 per cent) and if only A passes are taken into consideration 270 males have scored A passes compared to 167 females with a difference of 5.7 per cent.

In general, when the three subjects Physics, Zoology and Chemistry are compared, the performance in Chemistry stands at a very high level.

Achievement in Botany is given in Table VII.

In Botany, among the selected males 138 or 10.3 7% have obtained A grades compared to 99 females which accounted for 8.98%. When A and B grades are combined, among the selected, 849 males or 63.79% had reached A and B level. But 784 females who had scored A and B grades constituted 71.08% - a swing towards females which was higher than for males by 7.29%.

Even among students not selected, the percentage of A and B grades was higher for females - 25.62% than for men which was 20.3%, a difference of 5.32%.

When applicants are taken as one group, out of 2 139 females 1013 or 47.35 had scored A and B grades. On the other hand out of 2399 females 1116 or 46.5 1% had obtained A and B grades - a difference of 0.48% in favour of males.

Table VII: Botany - Differences in achievement between males and females-selected and not selected - 1993 -94

Selected students

Grade	Male	Female	%	%
A	138	99	10.37	8.98
B	711	685	53.42	62.10
C	464	312	34.86	28.29
S	18	7	1.35	0.63
F	-	-	-	-
Total	1331	1103	100.00	100.00

Not selected

Grade	Male	Female	%	%
A	3	5	0.37	0.39
B	161	327	19.93	25.23
C	596	911	73.76	70.29
S	48	53	5.94	4.09
F	-	-	-	-
Total	808	1296	100.00	100.00

Source: University Grants Commission

Achievement in Agriculture, the fifth subject in the Bio -Science stream is given in the Table VIII.

Table VIII: Agriculture - Differences in achievement between mates and females - selected and not selected - 1993 -94

Selected students

Grade	Male	Female	%	%
A	32	25	33.33	34.72
B	55	30	57.29	41.67
C	8	17	8.34	23.61
S	1	-	1.04	-
F	-	-	-	-
Total	96	72	100.00	100.00

Not selected

Grade	Male	Female	%	%
A	14	15	12.84	12.20
B	46	53	42.21	43.08
C	45	51	41.28	41.46
S	4	4	3.76	3.26
F	-	-	-	-
Total	109	123	100.00	100.00

Source. University Grants Commission

Only a smaller number of students had chosen the subject Agriculture as an alternative for Physics.

Among students who had been selected to the university 87 or 90.62% had obtained A and B passes while the comparable figure for female students was 55 or 76.39% - a difference of 14.23% in favour of male students.

Among students who had not been selected the differences do not appear to be significant.

In the total group 147 males out of 205 applicants or 71.7% had secured A and B passes. In the female group 123 out of 195 applicants or 63.0% had scored A and B passes - a difference of 8.7 per cent in favour of males.

Table XI below, gives a summary of A and B passes scored by each group male and female according to the five subject areas. The figure have been given separately for the students selected and the total number of applicants.

Table IX: Comparison of percentage of A and B passes by gender and by subject area - students selected and applicants - 1993 - 94

Subject	Selected students			Applicants		
	Male	Female	Difference	Male	Female	Difference
Physics	28.84	16.88	+ 12.0	19.30	7.80	+ 11.5
Zoology	19.09	16.77	+ 2.32	12.34	8.33	+ 4.0
Chemistry	57.62	58.39	- 0.77	39.80	32.50	+ 7.3
Botany	63.79	71.08	- 7.29	47.35	46.51	+ 0.8
Agriculture	90.62	76.39	+ 14.23	71.70	63.00	+ 8.7

As evident from Table IX the percentage of A and B passes for Physics and Zoology was low, but males have performed better than females in both groups - those selected and applicants.

In Chemistry and Botany the percentage of A and B passes had been high and among students selected females have fared much better than males in Botany while in Chemistry the difference has not been conspicuous. Among all applicants, males have done better in Chemistry.

The number of candidates taking Agriculture had been less but the percentage of A and B passes appear to be very high with males leading among those both selected and applicants.

Disparities Among Districts

The data for admission to universities from the Bio - Science stream by district is given in Table X.

All applicants from seven districts have been selected and the districts were Nuwara - Eliya (cut off mark 189), Monaragala (182), Vavuniya (184) and Trincomalee (191). These districts have benefited from the district quota system - a mechanism to compensate for the low level of educational facilities and uneven socio-economic development.

In all other districts, with the exception of Polonnaruwa, a greater percentage of males have entered the different faculties falling under the Bio-Science stream. Even though the number of applicants have been high among females, the actual percentage getting in had been low. This could be explained in terms of achievement differences between males and females.

The highest number of candidates in the Bio - Science stream appear from Colombo, Jaffna, Kandy, Galle, Matara, Kurunegala and Gampaha. The number of female candidates applying for selection also have been high in these districts, but the percentage getting selected have been low (Table X).

The disparities that exist in districts among students qualifying and applying for the university reflect the educational as well as socio - economic imbalance in the particular districts.

Raw Aggregate Mark

Selection of students to the university is carried out on the raw aggregate mark which is based on the aggregate of four raw marks the student secures in the four subjects he has chosen in the subject stream. Accordingly, applicants in the Bio- Science stream have been assigned to the faculties Medicine, Agriculture, Dental Science, Veterinary Science and Science depending on a cut off mark on the basis of vacancies available in each faculty across the university system. The cut off mark for each faculty varies according to the particular faculty as well the district. For example, while the cut off mark in Colombo for Medicine was 271 it was 249 for Science. Similarly the cut off mark for Medicine in Nuwara Eliya was 217, while it was 189 for Science from the same district In Moneragala the cut off points for the two faculties Medicine and Science had been 210 and 183 respectively.

Table X: Bio-Science stream - Number applying and number selected with percentage

District	Applicants		Number selected		Percentage selected	
	Male	Female	Male	Female	Male	Female
Colombo	466	522	302	241	64.8	46.1
Gampaha	112	174	74	86	66.0	49.4
Kalutara	95	132	65	49	68.0	37.0
Kandy	144	195	84	76	58.0	39.0
Matale	40	38	23	18	58.0	47.0
Nuwara-Eliya	33	22	33	22	100.0	100.0
Kurunegala	136	151	84	75	61.7	49.6
Puttalam	53	44	31	23	58.4	52.2
Anuradhapura	84	51	53	25	63.0	49.0
Polonnaruwa	36	16	26	12	72.0	75.0
Badulla	75	89	55	48	73.3	53.9
Moneragala	18	11	18	11	100.0	100.0
Kegalle	70	81	43	41	61.4	50.6
Ratnapura	81	102	45	50	55.5	49.0
Jaffna	142	249	59	78	41.5	31.3
Kilinochchi	11	2	11	2	100.0	100.0
Mullaitivu	6	3	6	3	100.0	100.0
Mannar	6	11	6	11	100.0	100.0
Vavuniya	5	6	5	6	100.0	100.0
Batticaloa	57	37	28	14	49.1	37.8
Ampara	101	40	58	22	57.4	55.0
Trincomalee	15	19	15	19	100.0	100.0
Hambantota	91	53	68	23	74.7	43.3
Galle	119	197	63	88	53.0	44.6
Matara	143	154	77	60	53.8	39.0
Sri Lanka	2139	2399	1331	1103	62.2	45.9

Table XI portrays the distribution of the raw aggregate mark for selected and unselected students irrespective of faculty of study and district of origin.

According to Table XI distribution of the raw aggregate mark for selected students spread from 344 to 180 and this could be explained in terms of the variation in the concentration of marks for different districts for which different cut off marks have been adopted.

Table XI: Bio-Science stream - Number applying and number selected with percentage

Selected students

Aggregate mark	Males		Females		Total	
	No.	%	No.	%	No.	%
320-344	12	0.5	-	-	12	0.5
300-319	26	1.9	09	0.8	35	1.4
280-299	12	9.4	69	6.3	194	7.9
260-279	311	23.4	218	19.8	529	21.7
240-259	427	35.5	508	46.0	980	40.3
220-239	240	18.0	188	17.0	428	17.6
200-219	95	7.1	81	7.3	176	7.2
180-199	50	3.8	30	2.7	80	3.3

Percentage of females among selected = 45.3

Table XI, taken together as one, reveals achievement differences between males and females. Among the selected 2.8% or 38 males have aggregates of over 300, where as for females it was 0.8% or 9 in number. In the range of scores between 260 and 299 there were 436 males or 32.8 per cent, compared to 287 or 26.1 percent females. However, when one goes down to the range 240 - 259 the percentage of females increases with a difference of 10.5 per cent.

Selected students

Aggregate mark	Males		Females		Total	
	No.	%	No.	%	No.	%
320-344	12	0.5	-	-	12	0.5
240-243	31	3.8	42	3.2	73	3.5
220-239	355	41.5	516	39.8	851	40.4
200-219	268	33.2	451	34.8	719	34.2
180-199	174	21.5	287	22.2	461	21.9
Total	808	100.0	1296	100.0	2104	100.0

Percentage of females among selected 61

Source : University Grants Commission

Among the non-selected the percentage of males who have scored an aggregate of over 220 is greater by 3.3% while on the other hand more females fall below 219.

Special Problems Encountered when Adopting Different Cut Off Marks under the District Quota

Special problems have arisen when adopting different cut off marks for different districts in the case of faculties such as Medicine where the competition for admission had been very high. In 1993 - 94, the cut off mark for Medicine from Colombo was 271, while it was 210 for Moneragala. Accordingly, 189 students (percentage of males 66) from Colombo and 12 students from Moneragala had qualified for admission. However, this had left 662 students, in Colombo within the range 270-210 who could not gain admission for Medicine and out of this 54.2 per cent were females. The cut off mark for Medicine in Jaffna was 266 and with this cut off mark 40 students had qualified to enter university. But there were 42 students in Colombo who were below the Colombo cut off (271) mark and above the Jaffna cut off (266), yet without being able to gain admission. Within the range of Jaffna cut off mark (266) and Moneragala (210) for Medicine there were 247 students who failed to gain admission.

This sort of situation prevails in other districts such as Kandy, Galle, Matara and Gampaha where a large number of students compete for admission to the different faculties from the Bio - Science stream.

The Department of Examinations annually work out the school performance indices based on the G.C.E. A/L results and in 1992 out of the best performing schools in Science 35 schools had indices ranging from 66 to 56. Out of these 35 schools 15 schools were in the municipality of Colombo while 10 were located in Jaffna. Kurunegala and Kandy accounting for 2 each.

The location of high performance schools in the urban centers of each district poses the question whether it is reasonable to adopt a uniform cut off point for each district. The pertinent issue here will be the classification of schools according to facilities taking into consideration within district disparities and making adjustment in the cut off mark based on the classification of schools.

Table XII gives the pattern of placement of students from different districts in each of the faculties connected to the Bio - Science stream. The that in this table covers only 1582 students who had furnished information on registration.

Table XIII gives the distribution of marks of students admitted to the faculties of Medicine in each of the districts.

In 1993-94 out of the 849 students admitted to the faculties of Medicine in the universities 726 or 85.5 per cent had an aggregate of 250 or more. Only 2 students had been admitted with an aggregate of less than 200 (Table XIII).

Out of 1586 admitted from the Bio-Science stream for whom data were available, 993 or 62.6 per cent had scored aggregates of over 250. Only 39 students had been admitted from Bio-Science with an aggregate of less than 200 (Table XIV).

Table XII: Bio - Science stream (1993 - 94)
Placement of students in faculties according to district

District	Applica- nts	Selected	Med.	Bio	Dental	Agri.	Total Registered
Colombo	988	543	201	39	30	44	314
Gampaha	286	160	49	30	5	20	104
Kalutara	227	114	37	12	2	17	68
Kandy	339	160	66	25	1	24	116
Matale	78	41	12	9	3	2	26
Nuwara-Eliya	55	55	21	15	2	5	43
Kurunegala	287	159	50	13	6	22	91
Puttalam	97	54	19	7	2	6	34
Anuradhapura	135	78	27	11	3	10	51
Polonnaruwa	52	38	13	6	2	4	25
Badulla	164	103	31	24	4	11	70
Moneragala	29	29	15	6	4	5	30
Kegalle	151	84	28	17	4	4	53
Ratnapura	183	95	32	21	3	14	70
Jaffna	391	137	41	14	7	13	75
Kilinochchi	13	13	4	1	2	1	8
Mullaitivu	9	9	4	-	1	1	6
Mannar	17	17	5	5	3	1	14
Vavuniya	11	1	4	-	1	-	5
Batticaloa	94	42	15	15	1	5	36
Ampara	141	80	24	23	1	4	52
Trincomalee	34	34	13	7	1	4	25
Hambantota	144	91	30	27	1	10	68
Galle	316	151	53	22	8	20	103
Matara	297	137	45	16	2	32	95
Total	4538	2434	839	365	99	279	1582

Table XIII: Bio-Science stream (1993-94)**Distribution of marks of students selected for medicine, by district**

District	Over 275	251-275	226-250	201-225	Below	Total
Colombo	148	53	-	-	-	201
Gampaha	7	42	-	-	-	49
Kalutara	12	25	-	-	-	37
Matale	1	8	3	-	-	12
Kandy	38	28	-	-	-	66
Nuwara-Eliya	1	2	12	6	-	21
Galle	28	25	-	-	-	53
Matara	22	23	-	-	-	45
Hambantota	6	24	-	-	-	30
Jaffna	18	23	-	-	-	41
Kilinochchi	2	2	-	-	-	4
Mannar	-	-	4	4	-	8
Mullaitivu	-	-	4	3	-	7
Vavuniya	-	1	-	3	-	4
Trincomalee	1	1	7	4	-	13
Batticaloa	2	5	8	-	15	
Ampara	4	12	8	-	-	24
Puttalam	2	17	-	-	-	19
Kurunegala	10	40	-	-	-	50
Anuradhapura	-	6	14	7	-	27
Polonnaruwa	1	2	6	4	-	13
Badulla	1	14	16	-	-	31
Moneragala	-	2	1	10	2	15
Kegalle	10	18	-	-	-	28
Ratnapura	1	26	5	-	-	32
Total	317	409	83	38	2	849

Table XIV: Bio-Science stream (1993- 94)
Distribution of marks of students admitted by faculty

District	Over 275	251-275	226-250	201-225	Below	Total
Colombo	148	53	-	-	-	201
Medical	317	406	83	38	2	849
Bio	-	63	209	61	32	365
Dental	-	44	8	11	3	66
Vet.	-	23	5	4	1	33
Agriculture	1	136	117	18	1	273
Total	318	675	422	132	39	1586

Table XV: Bio-Science stream (1993-94)
Distribution of marks of students admitted by faculty

Faculty	District	Over 276	251- 275	226 - 250	201- 225	Below 200	Total intake	Cut off mark
Medicine	Colombo	148	53	-	-	-	201	269
	Monera.	-	2	1	10	2	15	197
Agriculture	Colombo	1	36	7	-	-	44	248
	Monera.	-	-	-	-	5	5	188
Dental	Colombo	-	19	-	-	-	19	264
	Monera	-	-	-	-	3	3	188
Vet.	Colombo	-	11	-	-	-	11	257
	Monera.	-	-	-	-	1	1	190
Bio.	Colombo	-	31	8	-	-	39	244
	Monera.	-	-	-	-	6	6	183
Total	Colombo	149	150	15	-	-	314	-
	Monera.	-	2	1	10	17	30	-

Table XVI: Merit quota and district quota - Intake by faculty

Stream	District	Merit Q.	District Q.	Total
Medicine	Colombo	152	49	201
	Moneragala	-	15	15
Agri.	Colombo	28	16	44
	Moneragala	-	5	5
Dental	Colombo	16	63	19
	Moneragala	-	3	-
Vet.	Colombo	11	-	11
	Moneragala	-	1	1
Bio.	Colombo	28	11	39
	Moneragala	6	6	-
Total	Colombo	235	79	314
	Moneragala	-	30	30

Applicants - Colombo 988 ; Moneragala 30

Notes

- (1) Only 30 students have gained admission from Moneragala and all of them have secured their places under the district quota.
- (2) If the qualifying aggregate mark under four subjects had to be raised to 225 as proposed by one UGC committee, then only three students would have qualified from Moneragala.
- (3) If a system of merit alone with 250 as the cut off mark had been adopted only two students would have entered from Moneragala.

Conclusion

(1) When considering the opportunity for higher education in Science it would be clearly seen that regional disparities continue to exist both in the provision of school facilities and deployment of teachers. Colombo, Jaffna, Kurunegala, Kandy and Gampaha still continue to remain advantaged districts compared to districts such as Kilinochchi, Mannar, Mullaitivu, Vavuniya, Polonnaruwa and Moneragala. Disparities within districts remain equally significant as the disparities among the districts.

(2) In considering the G.C.E. A/L students' enrolment the percentage of males exceed the females by 4 per cent (male percentage 52.0). But at the qualifying level (minimum aggregate for application) more female students obtain eligibility for admission based on their G.C.E. O/L law aggregate mark. Data for the period 1987 - 1993 revealed that out of the total number of students qualifying for application on G.C.E. A/L Science results 55 per cent were females. But when actual selections have been completed more male students gain admission and the male - female gap in this respect had been around 7 or 8 per cent during the period under review. Higher achievement by male students had been the cause for this over representation of males in the Bio-Science stream.

(3) Among the total applicants for admission to university for the academic year 1993-94, based on the results of the G.C.E. A/L (1992) examination, 52.86 per cent were females. But among the total students admitted the female percentage was only 45.32. Even from among female applicants only 45.92 per cent were successful in gaining admission. Their lower total aggregate marks resulting from low performance in certain subjects had been responsible for this position. Among selected students 38 or 2.8% males had scored over 300 marks while the corresponding figures for females was 9 or 0.8% - a difference of 2.0 per cent. Within the range between 260-299 there were 436 or 32.8% males compared to 287 or 26.1% females. On the other hand at the lowest range of 240-259, there were 46% females while the male percentage was 35.5.

(4) The differences in the raw aggregate marks scored by males and females have their origins or sources in their performance in particular subjects in the Bio-Science stream.

When A and B grades scored in the subject areas are taken into consideration, male students have achieved higher grades than females in Physics, Zoology and Agriculture. In Chemistry the differences do not appear to be marked. In Botany females have fared better than males in scoring high grades. When the aggregate score is taken the higher aggregates among the males make them more eligible for selection to the faculties.

(5) In analysing the results on a district basis, apart from the few disadvantaged districts, in all the others, a higher percentage of males have gained admission to universities.

(6) Another revealing factor from this analysis of admission data has been the creation of a group of high achieving students in highly competitive and high achieving districts who fail to gain admission despite the fact that they have cleared the Cut off points for many of the districts which have low cut off points. A large number of high achieving, but unsuccessful students have been left out by the adoption of different cut off points and students in districts with very high cut off points have been adversely affected by this. This calls for an admission policy based on merit alone. But on the other hand, if a merit alone policy is to be adopted, districts like Moneragala will not be able to send even a single student to the university.

(7) Schools with high performance in the Science stream have been schools located in urban areas. Out of the total number of schools in Sri Lanka G.C.E. A/L facilities are available only in 21% and the Science stream is available only in 5% of them. The few schools with Science A/L facilities have been the privileged the urban areas. The question then arises whether the adoption of a common cut off mark for a district is reasonable or should it be some adjustment based on individual schools?

Implications of the Study

An important finding of this study connected with admissions to the universities from the G.C.E. A/L Bio - Science stream (1992) has been the existence of disparities in achievement between male and female students. It would be useful to ascertain why male students achieve high grades in Physics than female and why it is vice versa in Botany.

Are these differences in achievement a result of child rearing practices, home environment and socio cultural environment? Boys are supposed to be exposed to complex and open social situations while girls are secluded in their home environment and learning. On the other hand are these differences a result of the differences in the innate or academic abilities of the two groups. It would be rewarding to undertake future studies to have a closer look at this problem. The highest aspiration of students who seek admission to the university from the Bio-Science stream is to enter the faculty of Medicine, but a considerable number fail because of very high competition that prevails at this level. The district quota system creates a special problem in districts such as Colombo, Galle, Jaffna, Kandy, Kurunegala, etc. where a large number fails to enter the Medical faculty despite high achievement and this has led to much

frustrations among students as well as parents. The frustration becomes inevitable when wide ranging cutoff marks between individual districts are compared. On the other the district quota cannot be completely abandoned when the promise of equality of educational opportunity remains an unaccomplished task specially in districts such as Nuwara Eliya, Moneragala, etc. Instead of narrowing gaps between developed and less developed geographical regions - the gap in fact has widened during the recent period.

On one hand the merit alone policy cannot go completely unconsidered while on the other district quota cannot be completely dispensed with, under the circumstances the best policy would be a policy of mediation where a more reasonable ratio is adopted between merit and district quotas and increasing the student intake into Medicine to around 1200-1500 per an academic year. Another faculty of Medicine at either the North Western university or University of Uva could be considered a national as well as regional need.

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Higher Education in Sri Lanka: Need for a Change in Attitudes

S. B. Siyambalapitiya

Department of Engineering Mathematics, University of Peradeniya

ABSTRACT *A private tutoring system has been operating in Sri Lanka for several years to supplement of the public school system. As a result of the increasing number of failure rates at universities, the funds allocated for higher education is wasted to some extent. This paper discusses the need for a change in attitudes with respect to higher education in order to overcome this situation.*

Introduction

In Sri Lanka, the number of places available in universities for undergraduate education, in terms of the population is very much below that compared to developed countries. Prospective students are selected on the basis of their performance at the G.C.E. (Advanced Level) Examination. Due to the limited number of places available, the selection procedure for universities has become very competitive. This has resulted in developing a tutoring system outside the public school system over the years, to cater to the needs of students seeking admissions to universities.

It appears that the majority of parents believe that additional coaching outside the school system is necessary in order to make their children qualify for university admission. They seem to think that this exercise should be started during the formative years of children, as early as possible. Due to this heavy demand, a private coaching system for a full range of courses has been developed not only for G.C.E. (O/L) and (A/L) examinations, but further down lower grades too. Not only this, as soon as they are born, tremendous pressure is being exerted on the parents to start seeking a good school to admit their children when the time comes. This vicious circle continues

unabated and it appears that little attention has been paid to the ill effects of this situation.

In this paper, we try to identify how this problem affects the well-being of society. The objective of our study is to highlight the need for change in the attitudes of parents and authorities with regard to higher education.

Selection of Schools

The current government policy is to admit children to grade one of the government schools based mainly on the proximity of their home to the school. Every year, a radius around each popular school is defined based on the number of applicants and places available for admission of students to grade one classes, due to the heavy competition. Hence, a student living outside this radius will not be able to get admission to the preferred school. In order to prove residence status, certain documents have to be produced by the parents. It is not a secret that many parents forward forged documents obtained by unscrupulous means for this purpose. It has become difficult to identify these from the genuine documents. This situation has led to allegations of malpractices in the admission of children to schools. For grade one admissions, usually children are also interviewed by the admission committees of schools. It has been reported that, certain parents advise their children not to reveal the truth at the interview regarding their actual place of residence. A study of the places from which certain school vans operate to schools reveal that the 'distance rule' has not been followed properly. Of course, some parents move their residences to places closer to a particular school for which they are interested. Due to the reported irregularities, the government has announced a new admission policy recently (Secretary 2000), but it appears that the basic structure of the admission policy has not been changed; only the percentages of quotas for certain categories for admission have been changed. New categories also have been introduced. Therefore, it is very unlikely that the attitudes of parents regarding admission of children to school will change considerably as a result of these new measures.

It may be difficult to stop the malpractices by merely introducing tougher measures, because there is a common belief that the schools in urban areas are equipped with better facilities and good teachers. Many parents tend to think that children can get a better education in these schools rather than from rural schools. This is only partly true. Apart from the standard of education, there are other reasons for parents going after popular urban schools. One of these is the level of prestige attached to such schools even though the quality of education provided by them may not necessarily

be better than some lesser known schools. Some parents do not like to send their children to 'local schools as they mix up with children from backward families. It is very difficult to change these attitudes on a short term basis.

Consequences of Private Tuition

Many parents start sending their children for private coaching even before they complete primary education. This is especially done by the parents who managed to get their children into so called prestigious schools. The question has to be asked: if the education in these schools is so good why do they need additional coaching?

The level of additional coaching increases at an alarming rate, as the students get ready for G.C.E. (O/L) examination. The students will have to attend after-hour classes as well as classes arranged during the weekends. There are instances of some private coaching sessions in the very early hours of the day, even before the sun rises. Actually, the best time of the day for independent study by students is the early hours of the day.

There is no system of accreditation at all to monitor the quality of education provided by these tutorials in Sri Lanka. Those running these tutorials take advantage of this situation. There are many teachers in these tutorials who are really not qualified to teach in some of the classes. In some classes, several hundred students sit through a lesson. In the majority of these classes students do not even get proper seating facilities, let alone other basic requirements. Some classes are conducted in make shift sheds without proper ventilation or lightning.

In addition to the above shortcomings, the impact of the private tuition classes contribute to the worsening of the situation. Even the little time students had, to engage in self study and work out problems on their own has been devoured by this monster. Unfortunately, the majority of the parents do not realize the importance of self study to build up the confidence of students at examinations. It will also help to improve the speed of answering problems on competitive examination like G.C.E. (A/L). What takes place in these tuition classes is a passive learning process. As a result, students try to learn the material taught 'by heart' rather than by understanding the principles of the subject. On the face of it, it appears that the tuition master presents the material very well. But he makes sure that the time is not given to students to ask questions. Even if questions are entertained, usually they will be answered in the following class. Also, as the number of choices allowed at the examination is wide, the teacher can get away without discussing the topics which he is not really competent in. Very few students realize that only a handful of those attending these classes will gain entrance

to university. But the truth is that most of these students get admission to university anyway, even without attending these extra classes. They could have scored even higher marks if they spent more time in self study and problem solving. Parents spend vast amounts of money on this harmful exercise. There are many instances in which parents had to borrow money, or sell their property in order to pay for the tuition of their children.

The tragedy is, that even very clever students are sent for these classes by their parents. Parents do not realize that the intellectual development of children will be hindered as a result of attending these tutorials. This is clearly evident from the poor calibre of the students entering universities in recent years, even though they may have scored high marks at the G.C.E. (A/L) Examination. The studies by the Department of Engineering Mathematics of the new entrants to the Faculty of Engineering at Peradeniya, has clearly demonstrated this situation.

A 'ranking test' in mathematics is conducted annually for the students entering the Faculty of Engineering just before they begin studies at the university. The test is conducted to assess the knowledge and ability of the student at the entry point related to mathematics which is the most important subject for studies in engineering. Questions needing extensive knowledge of English are avoided in the test (Balasuriya 1998). The given questions are short-answer question, requiring a few lines of working by the students. The questions have been designed to test fundamentals, rather than details. Based on the results of the test, students are placed in tutorial groups such that the weaker students are in smaller groups enabling more individual attention.

The performance of the 'ranking test' in mathematics for the new entrants to the Faculty of Engineering at Peradeniya in the years 1998 - 2000 is given below in order to get some idea of the quality of students entering the university. Table I gives the percentage of students scoring marks in the given intervals (DEM 1998-2000).

The structure and the level of difficulty of the test have been uniform over the last few years. The questions set were clearly within the G.C.E. (A/L) syllabus. If we take 40 as the pass mark, it can be seen that 53.06%, 45.76% and 86.36% of new entrants failed this test in the years 1998, 1999 and 2000 respectively. As we can see, the level of performance is far from satisfactory considering the fact that the students gain admission to the university through a highly competitive examination. This will give us a clue as to why such a large number of undergraduates fail to successfully complete their degree programmes within the stipulated time.

Table I : Performance in the ‘ranking test’ in mathematics for the new entrants to the Faculty of Engineering at Peradeniya in the year 1998-2000

Range of Marks	1998	1999	2000
0 - 19	9.18%	6.78%	53.57%
20-39	43.88%	38.98%	32.79%
40-59	37.4 1%	39.83%	12.01%
60 - 79	8.84%	10.59%	1.62%
80 - 100	0.68%	3.8 1%	0.00%

Difficulty of Selecting Subject Areas

According to the structure of the G.C.E. (O/L) Examination conducted up to the late nineteen sixties, students were divided into subject streams as soon as they completed the eighth standard. They were divided into categories like biological sciences, physical sciences, arts, etc. (Siyambalapitiya 1998). But according to the current scheme, division into streams is postponed till the students passed G.C.E. (O/L) Examination. At the G.C.E. (O/L), students follow a common set of compulsory subjects. As a result, by looking at the performance of this examination it is very difficult to identify the most suitable subject areas for these students. For example, there are instances where students have selected subjects relevant to medicine even though the students has aptitude for studying engineering. This often happens due to parental pressure as they are interested in a lucrative career for their child. But, the ultimate result is that a considerable number of students fail examinations in university as a result of selecting wrong subjects.

Attitudes of Parents

As mentioned earlier, parental attitudes play a significant role in selecting a school for children, sending them for private coaching and also selecting subject areas for them. It appears that the open economic policy is also responsible for the shift in parental attitudes to some extent. As a result, the so called luxury consumer items are

made available freely. However, only the rich could afford to purchase these items. The mentality of many people in the middle class is to imitate the people in the upper income brackets. They contemplate short or long term measures to achieve these goals. A major long term measure will be to educate their children to the highest level so that they could enter into the elite group in society with their help. Many parents think that what they could not achieve in their life could be obtained by these means. In principle, this is a good thing. But the strategy they choose to achieve this goal could be far from satisfactory. In fact their attitudes may lead to disastrous result. In any society, only very few students can be of an intellectually high calibre. This fact has to be remembered by parents who should try to understand the nature of their talents rather than attempt to make their child an engineer or a doctor. Parents should not unnecessarily burden their children with unrealistic goals. On the other hand, some of the students who could not fulfil the ambitions of their parents may confront mental agony and some have to seek psychiatric treatment. But the tragedy is that, some of these students will never recover to lead a normal life and will suffer throughout their lives.

Faculties for Education

Today, the state sponsored education system in Sri Lanka has improved in many respects compared to the situation that prevailed several decades ago. For example, school text books are distributed to all the students by the government free of charge. This will lessen the burden on poor parents in educating their children. Not only this, lessons taught in all schools have become more uniform, because the teaching material is the same. Even though there may be shortcomings in some schools like scarcity of teachers in certain subjects, the overall situation has improved considerably. Again, in most of the cases this is not due to an actual scarcity but to the reluctance of teachers to serve in schools in remote areas. This situation prevails due to the lack of incentives for teachers to serve in difficult areas.

It has been reported that a considerable number of schools in the provinces have been identified to be closed down in the near future. One of the major reasons attributed to this situation is the low attendance at these schools. During at recent years necessary staff buildings and other facilities have been provided to these schools. Yet, attendance has remained low. It appears that the trend of sending children to popular urban schools has taken its toll. As we have mentioned earlier, the attitude of parents has been responsible for this pathetic situation. Thus the money spent by the government on the education of children is wasted due to parental attitudes.

The policy of admitting children to schools based on the proximity of the school from home may have been introduced with very good intentions. It had been felt that attending a school closer to home will be conducive to the education of children. But, parental attitudes have changed all this. Unfortunately, what happened was an exodus from rural schools to urban schools. As a result, these popular schools have become congested. The number of students in classes has increased to unbearable levels and teachers find it difficult to give a good education to children.

Deterioration of Knowledge

It has been found that, in the Faculty of Engineering at Peradeniya the knowledge of mathematics of new entrants is far inferior to entering a decade ago. Several reasons could be attributed to this situation. Some of these are the lowering of standard over the years, the impact of private tuition classes and the undue influence of parents in selecting subjects for children for G.C.E. (A/L) studies.

From the early seventies the standard of mathematics has been declined in the secondary school system in Sri Lanka. This was due to the changes made in the school curricula on several occasions. A strong foundation in mathematics laid up to the G.C.E. (O/L) has been diluted, as a result. A good knowledge of mathematics is imperative for the improvement of the analytical and logical thinking ability of students. This is an essential prerequisite for decision making in the complex situations encountered today and in solving various practical problems. Unfortunately, this aspect has been completely neglected. Students entering the Faculty of Engineering up to the early seventies had a rigorous training in mathematics for four years at school (two at O/L and two at A/L). This has been reduced to two years at A/L (Siyambalapitiya 1997). It appears that all the topics covered earlier are still on the syllabus but the fact is that the depth has been drastically reduced and students do not have adequate time to work through a sufficient number of problems and to grasp the fundamentals. Unfortunately, it appears that the authorities have not realized that the changing of the structure of examinations and syllabi at short intervals is counter productive.

For the majority of the students, transition from the school to the university has not been smooth. Even though the standard of the school curriculum has been lowered, the standard of the university courses remains the same. In fact, they have to be that way, because of the extent of the new knowledge added everyday. Actually, the standards at the universities have to be raised in order to have even a glimpse of the new developments. This seems to be a contradiction and the knowledge gap between the school and the university seems to be widening. In order to address this dilemma,

the only solution would be to give a sound school education to the children which will give them a thorough understanding of the fundamentals of important subjects. Once they grasp the fundamentals, they will be able to absorb any amount of new knowledge without much difficulty.

The majority of the students at the university find that the work loads are heavy and standards are high. Consequently, a large number of students fail their examinations. At the Faculty of Engineering, Peradeniya the number of students passing out as graduate engineers after four years of study is little more than half the intake. A large number of students take more than four years to complete all the requirements for the award of the degree. There are many students who take much longer to complete the requirements. Ultimately a considerable number of students give up, and this is a huge wastage of funds allocated to train engineers. Even in other disciplines like medicine the drop out rate seems to be fairly high.

In addition to the reasons mentioned above, large class sizes also contribute to this state of affairs. At the Faculty of Engineering, Peradeniya there are about 320 students in each batch. This is a very high number any standard. Since the abilities of students entering the faculty are very wide, it is imperative that they should be divided into smaller groups in order for the lecture programme to have any impact. This is an impossible task with the present cadre provisions. Therefore, the authorities should give serious thought to increasing the number of cadre positions at universities, especially in fields like engineering. Unless this is done, it will not be possible to reduce the high failure rates at the examinations in universities leading to the wastage of resources allocated for higher education.

Solving Real Life Problems

The other aspect of concern is the quality of graduates passing out of our universities currently. Even though they have passed the necessary examinations, the quality of the output when solving real life problems cannot be measured by examinations alone. They encounter new situations often when solving real life problems. This needs innovative thinking in addition to the knowledge of the techniques required to solve the problem. Unfortunately, there is evidence to suggest that this ability has been drastically reduced as a result of the passive learning process encouraged by the tuition masters. Especially, employers in the private sector are not happy with the quality of these graduates and some organizations have already requested the universities to take necessary action to improve the situation.

It is usually believed that competition will lead to improvement in various spheres of activities. However, the competition to enter universities will lead to ill effects. As a result of the competition, the students have become more and more selfish. It appears that some students do not even lend their notes or books to fellow students in the same class of the school in the belief that if they do so, they will fall in the ranking order in the competition to enter university. When they become adults these attitudes will continue, a situation that could be detrimental to the well-being of the society.

Expansion in University Education

Some people envisage further expansion of university education in order to reduce the competition at the G.C.E. (A/L) examination. Establishing additional seats of learning costs huge amounts of money. However, the remedy could be worse than the problem itself. As a developing country, Sri Lanka has limited avenues to employ graduates in various fields. Expansion of university education without increasing job opportunities could lead to dangerous consequences. Furthermore, the quality of the university degree will suffer as a result of unplanned expansion. The funding available even for basic facilities in universities has been reduced during recent years. For example, universities do not have adequate funds to order new journals which is an essential requirement in improving the quality of higher education. As a result, universities find it difficult to continue with even the subscriptions of the currently subscribed journals. Another serious drawback is the shortage of text books for reference by undergraduates. The number of books available are simply inadequate.

In Sri Lanka only about 2% of students sitting for G.C.E. (A/L) examination gain admission to universities which is by any standard very low (NEC 1997). Therefore, obviously there is a need for expansion of university education. University education also contributes to the expansion of the economy of a country in the long term. It has the potential of enhancing the productivity of a nation. But, this is possible only if the students admitted to universities successfully complete their degree programmes during the stipulated time. Unfortunately, this does not happen at the moment. Then, number of students failing examinations in all the faculties are increasing. This has reached high proportions in professional faculties like Medicine and Engineering. It means that the drop out rates are increasing. This problem leading to the wastage of scarce resources has to be addressed first and remedial measures taken without delay. Expansion of university education before doing that will only worsen the situation.

Conclusion

It may not be possible to find satisfactory solutions to the problems mentioned here in the short term. Therefore, it is necessary to initiate some long term measures as soon as possible. As an initial step, 80% attendance requirements in schools should be strictly implemented to discourage students attending private tutorials. This alone may not be sufficient because there is a common belief that the quality of teaching at state schools has deteriorated over the years. One of the reasons for this situation seems to be the lack of incentives for teachers. Specialized teachers in schools must be adequately remunerated. In addition to this, a scheme should be devised to give monetary rewards to teachers in the form of increments which will bring better results at examinations. Also, provision should be made so that good teachers will be able to get promotions fairly quickly without stagnating at certain levels. More and more teachers should be encourage to go to remote areas rather than forcing them to those schools which will just keep them marking time. They should be given incentive allowances and provided such facilities as good residential facilities. The long term objective should be to bring the levels and facilities of atleast selected schools in each region to the same level. Once this is achieved there will be no need for the parents to compete for places in urban schools.

Admission policy based on proximity of home to schools should be reviewed. The primary sections of popular urban schools should be separated from their parent schools while trying to equate the facilities of primary sections of provincial schools. This may reduce the demand for urban schools. Once primary education is completed, students should be allowed to enter any school they wish without giving consideration to the proximity of the school from home. These students should be admitted to schools based on a competitive examination, if the demand is high.

At the same time, the structure of the examinations should be modified so that the students do not need to look to the tuition masters to guide them. It appears that, under the new educational reforms some of these problems are being addressed. However, it must be borne in mind that the successful implementation of the reforms is possible only with a contented work force of teachers.

While attempting to implement long term measures, there is also a need for a change in attitudes of parents and authorities. As mentioned in the foregoing discussion the attitudes of parents should change with respect to selecting schools for children sending them for private coaching and selecting subject streams for the G.C.E. (A/L) classes. There is a need for a change in attitudes of authorities too with respect to providing cadre positions to universities and funding for journal subscriptions and books.

The current situation could be improved only by the realization that the education is an investment for the future that contributes the improvement of the standard of living of the people.

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Children with Hearing Impairment in the Regular Classroom

K. Anoma Chithrangani Alwis

Department of Special Education, Open university of Sri Lanka

ABSTRACT *This case study was carried out with an ethnographic research approach and the overall aim was to find out how children with hearing impairment took part in the learning process. For this purpose, a class of 45 students including two hearing impaired children were selected. Observations, interviews and informal conversations were used for data collection. The observations were done by video recording and it was the main source of gathering data. Three teachers were interviewed and informal conversations were conducted with two hearing impaired children and one with their peers. Information was presented descriptively and by interpretation analyses. To achieve the aim, the following questions were investigated. What are the communication modes used in the classroom? How are the teacher - student and student - student interactions and how do these factors affect the learning processes of children with hearing impairment in a regular classroom. The results show that hearing children are an extremely useful source in the regular classroom to support children with hearing impairment. Two children with hearing impairment were involved in the inclusive model and they were successful academically, socially and emotionally. More over, there were no communication problems in the classroom and there was good interaction among the children apart from the teacher - student interactions. The findings of this study prove that awareness programmes on special education must be conducted for secondary education teachers to modify their role and change classroom arrangements to deal with children more closely. Further research should be conducted to discover the possibilities of using sign language, and how to develop the foundations of an interpretation service for children with hearing impairment in the regular classroom.*

Introduction

Today we had slides about plants. I could hear the teacher talking the whole time, but I did not understand a word she said. I feel so left out. Why doesn't she use a flashlight or something so I can watch her face, too. We had class discussion today. We were supposed to take notes. I didn't take much. I spent a lot of time trying to see who was talking. Why doesn't some body just raise his hand longer when he s talking or stand up or some thing? Even sitting in a circle would help. I wish I had one person who would let me know who is talking and tell me what he says if I miss it.

The above citation from the book 'Into the mainstreaming of Education' Froehlinger (1981) expresses a deaf student's own experiences at an elementary school. The child had a severe hearing impairment from birth. It provides us with a new framework to think deeply about the students with hearing impairment studying in regular classrooms. Therefore the time has arrived to focus our attention on these quoted ideas.

Considering the regular classroom performance of the children with hearing impairment the educational environment factor is of a great significance in determining pupil outcomes. This factor could consist of degree of hearing loss, additional impairments, socio - economic status and language used at home. Powers (1996) argues that these factors influence only 20 percent of the mainstreamed hearing impaired pupil's educational achievements. He further says that 80 percent of the variations in hearing impaired pupils achievements still is unaccounted and it is reasonable to conclude that a significant amount of the variation is related to educational practices.

Currently, most educators are motivated to conduct research on inclusive programmes. One such team of deaf educators and regular educators was involved in teaching deaf and hard of hearing and they have found out that certain educational conditions are closely associated with inclusion programmes. They rated those children using three criteria such as academic achievement, social adjustment and self-confidence / esteem (Afzali, 1995). About 67 percent reported that the impact of inclusion on the academic achievement of deaf or hard of hearing students was positive or strongly positive. This team further describes that the impacts of full inclusion is more favourable to deaf or hard hearing children as they received social encouragement if a full range of placement options were available and if teachers and parents supported the programmes. The above research information draws attention to the benefits children with hearing impairment in the regular classroom will have. But according to the experiences of a child with a hearing impairment, much information emerges about needs of hearing impaired children in the regular classroom.

In addition, I have an understanding of children from my experiences of teaching with hearing impairment for almost seven years and as a Teachers' College lecturer in the same field during the past ten years.

With my experience I indulged in a deep study to find out how hearing impaired children experience learning in regular classroom. I was interested in investigating through this study a child's self confidence and self esteem, the child's communication ability, the teacher attitudes and commitment and expanded teacher skills, as well as the understanding and acceptance of hearing peers, interagency co-operation and other hindrances. Therefore my overall aim in this study is to investigate how children with hearing impairment take part in the learning processes in regular classrooms. The study might be a contribution to the collected knowledge that teachers, special education teachers, educators, parents, students and anybody concerned with these children need.

Research Problem

Children with hearing impairment in Sri Lanka can be educated in special schools and through integration programmes, in regular schools. With regard to the educational policies in Sri Lanka every child from five years of age has a right to seek admission and study in a school, including children with hearing impairment. However, parents can admit a hearing - impaired child to school or a school that has integration programmes, as they wish.

The school census report (1996) shows that there are only five special schools for hearing impaired children and an additional 15 special schools for deaf and blind children in the country. Most special schools are situated far away from the child's home and there are limited residential facilities in the hostels. Children must be on a waiting list for a long time to be admitted to a special school. When we consider these facts, the opportunity for admittance to a special school is lost for most children with hearing impairment. Special Education statistics (1994) show that only 158 integration programmes are available for the children with hearing impairment in Sri Lanka, which means that such programmes are not found in every school. These programmes are available in very few schools in certain districts. The maximum number of the children with hearing impairment is five to ten per teacher (Special Education Policies 1991) and five to eight per teacher in multi grade level. Due to these circumstances many students may not get admission to a school with the integration programme, but they will definitely get a chance to enter the nearest regular school without any consideration of the nature or degree of the hearing impairment, according to the compulsory education ordinance of 1939.

A hearing impairment in Sri Lanka brings severe communication problems, as well - recognized sign language is used. Therefore many problems have cropped up when hearing impaired children learn in a regular class. The problem I am researching asks how hearing - impaired children are educated in the regular school without any special equipment, extra assistance and even a sign language.

Background

Today, we see many conspicuous changes taking place in practices of special education. These changes affect teachers, educators, administrators and parents directly. Broad objectives of teaching children with special educational needs are indeed the same as the objectives of teaching all other children in general education. Over the past decades, consensus has grown regarding the kinds of changes needed if learning is to occur. Professionals therefore try to out find and develop teaching strategies for children with special educational needs. As a result the world has faced the new trend of providing Education for children with special Educational needs within mainstream education.

In conformity with the charter of the TIN, all states should recognize education as a human right for all children, disabled included, ensuring a child's active participation in the community. Hence, the rights of the disabled child for special care should be recognized, and everything including education, should be provided free of charge whenever possible. All states should provide free and compulsory education, encourage secondary and higher education, and everything should be directed to the development of the child's personality, talents and mental and physical abilities to their full potential (Children's Charter 1990).

Thus, general education authorities in all states are responsible for the education of disabled children (Standard rules 1994) and should recognize the principle of equal primary secondary and tertiary educational opportunities for disabled children, youth and adults in integrated settings. State parties should ensure that they become an integral part of national education planning, curriculum development and school organization.

While having a universal awareness of special education, Sri Lanka has also prepared her own special education policies. The National Education Commission report of 1961 declared that for children where the degree of disability was low, should first attend a special school, and when the necessary skills were acquired, progress to a regular school.

Sri Lanka has accepted the policy of integration (Cabinet paper 1969) that is, the admission of disabled children to regular schools. Thereafter Sri Lanka has taken action to develop the integration programme (Educational reforms 1979) and special schools parallel to each other and to develop pre-school education for the children with hearing impairment.

Inclusive Education

The vision on special education was expanded at the world conference held in June, 1994 with more than 300 participants from 92 countries at the city of Salamanca in Spain. The conference pledged to support the concept of inclusive education. The principle of inclusion is several tenets (Salamanca, 1994) Students are more similar than dissimilar and all can learn regardless of disability. Learning often occurs through participation, modeling competent peers, and diverse instructional supports that allow a student to overcome disabilities that detract from learning. All these can be provided in the regular school.

Inclusive education is instrumental in promoting human rights and child right and preferably takes place in a regular class in a school that is close to the child's residence. The inclusive concept consists of flexible and individualized assistance programmes for children with special educational needs.

Welcoming all children without discrimination into the regular school setting takes place. It is a team effort of the whole school. Inclusion applies not only to education but to a broader range of social, political, economic and cultural aspects. It recognizes people with disabilities as active members of society. This concept differs totally from the traditional rejection, segregation and neglect.

Lopez (1995) states that inclusive education has become a more fashionable concept among many professionals working in the field in recent years and that it means something more than just moving children with disabilities to a regular school. Therefore, it should be an essential and compulsory component of the regular school setting.

A child with special education needs learning in a regular class is known as integration or mainstreaming. Although in both integration and mainstream and inclusive education the child is part of a regular class. There are many practical differences. Emanuelsson (1988) has taken the term inclusion to mean goals or aims based on the ideology of democracy. Hence, issues such as every one being of equal value and equal access to all in society are of great importance.

To implicate this new thinking in inclusive education, it should be articulated in a national education policy. Structural change in the general education system is necessary in order, to develop this concept Jonsson (1995) suggests that the policies can regulate practices surrounding education aims, but they cannot directly control pedagogic practice and to be effective, a policy must be thoroughly discussed and internalized by educational administrators and practitioners.

Inclusive Education in Sri Lanka

Sri Lanka recognizes education as a universal human right and she has ratified the UN convention on the rights of the child and endorsed the world declaration on 'education for all' the education ordinance no. 31 of 1939 compel parents to send children between the ages of 5 - 14 to school.

Sri Lanka recognizes education as a universal human right and she has ratified the UN convention.. The school census report (1992) shows that 8 percent of the student population Cannot reach the desired competency level in school, and another 22 percent need extra help to reach the required competence level. The same report indicates that the ration of disabled pupils to mainstream pupils is about 110 to 10000, although in some districts this is very much higher. Sri Lanka has a long history of caring for disabled people, and even at present educational programmes are conducted in regular schools to help the disabled. The Ministry of Education, since 1969, has conducted integration programmes for the children with special educational needs and now more policies are being prepared for inclusive education.

Lopez (1999) indicates through her study how inclusive education has developed in some schools in Sri Lanka and she illustrates how the restructuring of these schools has encouraged more children with special educational needs to enroll. She argues that there is no doubt that school development in Sri Lanka, has taken a turn towards 'A school for all children' regardless of disabilities. With reference to Lopez I further say that it is a positive step for an educational set up in Sri Lanka to provide maximum benefits for the children with special educational needs, including the children with hearing impairment. The educational Reforms (1997) have paved the way to create an environment that is conducive to the implementation of such inclusive programmes.

Inclusive Education and Children with Hearing Impairment

All children with hearing impairments have a right to gain their education in the regular school through inclusive education, but additional principles should be included for children with hearing impairment taking into account individual needs. For example, education authorities should recognize the importance of sign language (Standard Rules 1994) as the medium of communication among deaf children, and provisions should be made to ensure that all deaf persons have access to education in their natural sign language.

Nevertheless, Sri Lanka has not yet taken any principle consensus of the above condition and has still not defined a common national sign language to be taught. However, according to the School Census Report (1992), 3355 male and 2822 female students with hearing impairments were learning in governmental regular schools, so obviously a universal sign language is of great importance.

Aim and Objectives of the Study

The Overall aim of the Study is to investigate how children with hearing impairment take part in learning processes in regular classrooms. My focus is on communication modes used in their classroom, interrelationships between teachers and students, and how these modes and interrelationships affect the learning processes.

I seek answers on the following questions:

How do teacher-student, student-student interact in the classroom?

What types of communication modes are used for their communication in the classroom?

What are the possibilities available to children with hearing impairment and what are the problems that they face in the regular classroom?

Children with Hearing Impairment in Regular Classrooms

When we look at the history of hearing impaired students learning in regular classrooms, we see that this started as far back as the first half of the 19th century. Moors (1978) refers to Gordan (1885) and writes of attempts to educate the deaf in public schools around 1815. Moors (1978), further states that in 1821 Graser tried to bring deaf children and hearing children together by establishing an experimental school

in Bavaria in which deaf children were integrated with special tutoring, and associated with hearing children as much as possible. A gradual increase of hearing impaired children in regular classrooms can be seen today and it has been taking place during the last two decades. Cohen (1995) points out that more than 60 percent of hearing impaired students learn in the regular classroom in USA. At the same time, he says that it is not clear how many were found in the inclusion models.

Strengths and Weaknesses in Mainstreaming

Research information available shows that the mainstream environment or the regular classroom is not always the most effective educational setting for children with hearing impairment. The hearing impaired child is confronted with situations that are positive as well as negative. A child, profoundly deaf, will not fare well in a regular classroom (Taylor 1988) because the environment is beyond his reach. He will not be able to grasp most of the things in the environment. Foster (1989) and Mertens and Kluwin (1986) provide evidence to show that deaf students in a regular classroom have problems in areas of personal and social development. These children sometimes exhibited behavioural problems. Although researchers highlight negative outcomes or weaknesses of social development, a completely different picture is shown in research done in Britain (Aplin 1987) which shows that hearing impaired pupils in regular classrooms are socially and emotionally better adjusted than pupils in special schools. Holt and Allen (1989) show that 'full inclusion' encourages greater achievements in reading and mathematics in students with hearing loss.

Interrelationships

Quigley and Kretschmer (1982) and Lynas (1986) state that when children with hearing impairments are given support person in the regular school to help them in their work, a high level of positive discrimination may take place. Lynas further means that this positive discrimination was likely to prejudice integration and it was deeply resented by both children with hearing impairment and hearing children. Guraluick and Walker (1986), discuss that when non handicapped children interact with children with hearing impairment they do not perform well. Anita (1994) found that pre-school children with hearing loss become dependent on teachers rather than peers for rewarding social interactions.

Language and Communication

Vemen and Andrews (1990) describe that when hearing impaired children do not use sign language they tend to develop undesirable social skills. They also mean that the children will have difficulty in speech reading and because of this they may, without being aware of it try to dominate the conversation.

The ability of the teacher to communicate is also of great significance. Kiuwin (1981) and Strong (1987) emphasize the importance of the teacher's ability to use signs.

Classroom Requirements

Berry (1988) suggests repeating and rephrasing as much as possible for students who are deaf or hard of hearing. In addition, well-prepared programmes can be effective in improving the skill of comprehension questions for deaf and hard of hearing students. Akcameti (1999) highlights that the learning of skills depends on techniques and methods used during the teaching and learning process. According to Bullard and Schirmer (1991) questioning can also be used as an effective tool during classroom discussion. Egelston-Dodd cited in Stahiman (1998) emphasize that interpretative services should be provided to deaf and hard of hearing children. Ross (1978) says that poor classroom acoustics is a major factor contributing to poor performance.

Methodology

A Study within the Ethnographic Research Approach

The method I chose for my study was ethnography, which is a tool for studying and understanding people's way of life. Participant observation and interviews are main techniques of data collection. Clough and Barton (1995) describe that ethnography is a holistic approach, thick description of interaction involving the discovery of important and recurring variable in the society as they relate to one another under specified conditions and as they affect or produce certain results and outcomes in the society. Hence Clough and Barton further illustrate the ethnography method and described it as a naturalistic inquiry with an open-ended research design.

According to Wilcox cited in Spindler, (1982) educational ethnographers use ethnographic methodology to study the process of education and schooling. Because I study the process of learning in children with hearing impairment I chose the

ethnographic research approach. My study is a case study and I took a whole class as a case. A classroom can be considered as a case because a case study is an investigation of a specific phenomenon, e. g. a programme, an event, a person, a course, an institution or a social group (Merriam cited in Lopez, 1999). Mertens and McLaughlin (1995) state that a case study is one type of ethnographic (interpretative) approach that involves an intensive and detailed study of the one individual, or a group as an entity, through observation, self report and any other means.

Observation

In the constructive paradigm, the type of participation observation is used to collect data in a qualitative research. I also used participation observation in my research for data collection. Mertens and McLaughlin (1995) mentioned about five types of participation observation:

non participation, passive participation, moderate participation, active participation and complete participation. I have used passive participation here. According to the authors, passive participation means that the researcher is present but does not interact with the participants. Thus, the data collected through passive participation was firstly classified and then noticeable characteristics were presented.

Interviews

The research interviews for this study can be characterized as casual conversation or unstructured dialogues. However an interview is not only a conversation between two partners, because the interviewer defines and controls the situation and participants are brought to the occasion. Interviews could go beyond the spontaneous exchange of views in every day conversation and become a careful questioning and listening approach. Interviews in a qualitative study are typically done with an unstructured or minimally structured format. Interviewing can be conducted as a part of participant observation even as a casual conversation (Mertens & McLaughlin 1995) In my study, I used a minimally structured format and casual conversation for interviewing the participants.

Credibility

In ethnographic studies, credibility gives a parallel meaning of reliability and validation. Mertens and McLaughlin (1995) identified credibility as the criterion in qualitative researchers that parallels internal validity in positivist research. A number of research strategies can be used to enhance credibility in qualitative research. Triangulation can be mentioned as a very common technique. Combining the data from different sources is the principle of triangulation. Mertens and McLaughlin (1995) state that triangulation involves checking information that has been collected from different sources or methods for consistency of evidence across sources of data.

Considering the above ideas I used triangulation for my research. My empirical materials are observations, Interviews and informal conversations. Observation was the main source. More over the member checks strategy was also used for the interviews.

Member checks can be formal and informal. For example, at the end of an interview, the researcher can summarize what has been said, and ask if the notes accurately reflect the person's position (Mertens & McLaughlin 1995, p. 54).

Subjects

The names that I am using for the purpose of the study are Himali and Nalika who are hearing impaired and both of them have hearing parents. Nalika has a younger hearing brother and Himali has a younger hearing sister. They come from general speaking families to the regular class. Himali and Nalika were born hearing impaired. They are 12 years old. The average age of the students in the class is 11 years.

One-year delay has been noted (Piaget cited in Wadsworth 1978) when the maturity of hearing impaired children is compared with non-hearing impaired. Furth cited in Wadsworth (1978) examined the mental development of deaf and mute children and concluded that they develop logical structures in the same sequences as Piaget's description of normal children, although their development is typically delayed by about one year. Therefore Himali and Nalika could be considered as children of the same age level in mental development even though chronologically they are one year ahead of the others. When we consider the educational placement of a child with hearing impairment, it is necessary to assess the hearing levels of the child.

The hearing level of Himali is dB 90 in the right ear and dB 73 in the left ear. Nalika's right ear indicates dB 103 and dB 100 in the left ear. The children in the hearing level of dB 70 and beyond routinely require special class or special school

placement (Moore's 1978) and require special speech, hearing language and educational assistants. However a British survey report illustrates (Moore's 1978) that practically all the children who are studying in regular classrooms are, most of the time, categorized as profoundly deaf. Many of those children certainly understand their teacher well and mostly speak freely with the teachers, and often with a good voice. These children are also lively and spontaneous.

Hearing Aids

Himali

Himali uses behind the model Rexton brand of hearing aid for both ears. She bought them from the National Council for the Deaf in Sri Lanka for Rs. 6000 each. The National Institute of Education has analyzed Himali's hearing aid and matched it to her audiogram. The ear mould was also prepared to fit her outer ear at the beginning of this year. She wears the hearing aids as long as she is awake. Normally, one battery will suffice for four days and Costs Rs. in the general market in Sri Lanka, however her parents buy batteries from the National council for the Deaf for Rs. 12 each. Himali has a good knowledge of manipulating the hearing aid and she also goes for a hearing test once a year.

Nalika

Nalika uses a Widex brand hearing aid only for the left ear and she got it free of charge from an NGO called Sarvodaya. She has not had her hearing aid analyzed, even though she says bearing is better, and without it she cannot carry on with her class work. The National council for the Deaf adjusted her ear mould at the beginning of this year. It works with a rechargeable battery which costs Rs. 350 and the single battery has an eight months lifetime.

Data Collection

To collect data for my research I used observation, interviews and informal conversations. I observed the classroom using a video camera three periods a day each week during two school terms. My strategy was to stay outside the classroom, recording everything happening and then watching the tape several times noting down all details. I had informal conversations with the two hearing impaired children and noted down all details as soon as possible. For these conversations I used lip reading mixed with pronunciation and other signs that are generally used in natural conversations.

The two hearing impaired children can understand through these communication modes. My experiences in this field played a vital role in these conversations.

I also had an informal conversation with a hearing peer who was used to helping the children with hearing impairment and noted down everything after finishing the conversation. Minimally structured interviews conducted with English, Mathematics, and Environment Study teachers were recorded with an audio cassette recorder and everything was noted later. The duration of an interview was nearly 45 minutes.

All participants were selected purposefully. A sample where participants are included according to relevant criteria that are a particularly important, to the researcher (Mertens & McLaughlin 1995) is called a purposeful sample. Both hearing impaired children said that Mathematics is an easy subject and English is a difficult subject for them. Therefore I selected the teachers of Mathematics and English for my interviews. I also noticed a difference in the teaching of Environmental Studies. It included more activities and visual aids. Therefore this subject teacher was also selected for the interviews. During my observation, I noticed that one peer paid special attention to the children with hearing impairment. Therefore, I had an informal conversation with her.

Data Analysis

The descriptive information noted down from the videotapes was compared with research questions and then reclassified. I scrutinized and observed specific actions on the videotapes in slow motion and checked, revised and reorganized the notes I had made. Two colleagues of mine assisted me. Both had a good knowledge of teaching children with hearing impairments. We agreed on the information that we obtained after re-watching the videotapes. All recorded data from the interviews with the teachers were replayed. The teachers who participated at the interviews listened to it and comprehensively confirmed. Thereafter I listened to all audio cassettes several times and noted down proper dialogues. In addition noted down, in detail, the informal conversations with students. Finally I extracted the essence of the dialogue and interpreted it accordingly.

Data Presentation

I present the data subjected to the observation under the classroom synthesis. This classification focused on specific characteristics. For example “communication is considered part of interaction” but I classified it separately. The reason is that I identified communication modes used by the children that were unique to them.

Thus I observed special features in every classification. According to this the important features obtained from the data are presented in Figures 1 - 5.

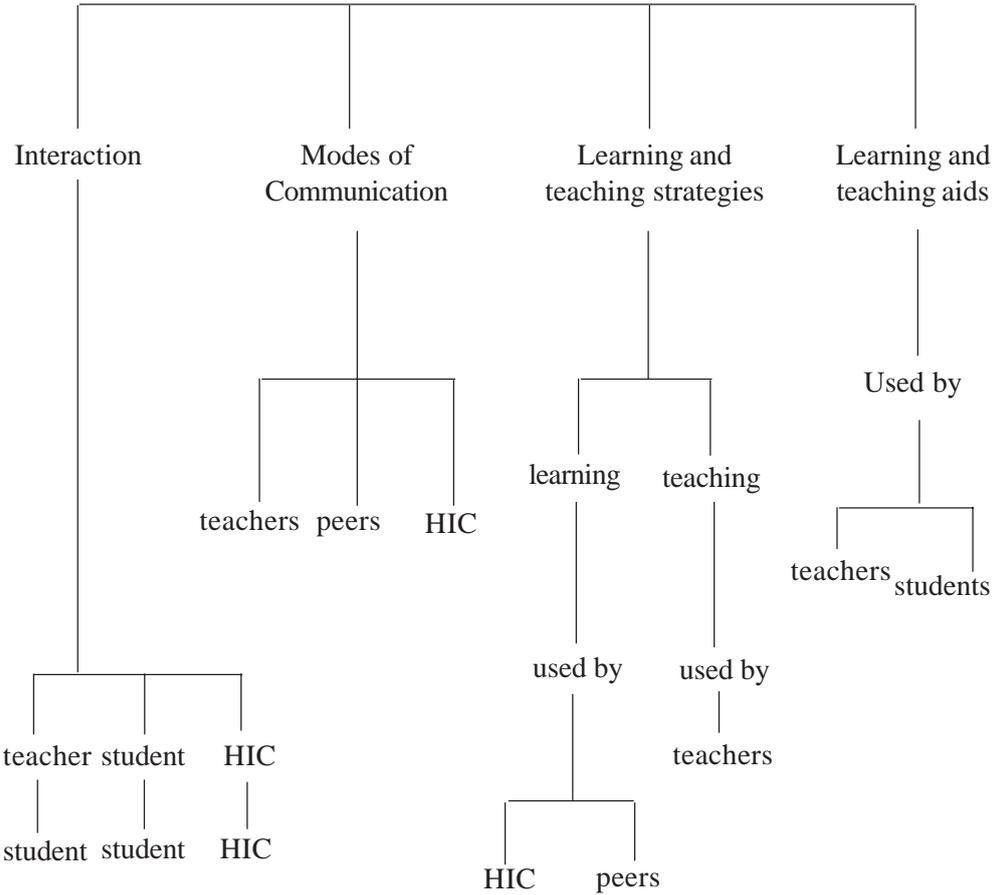


Figure 1 : The classified classroom synthesis

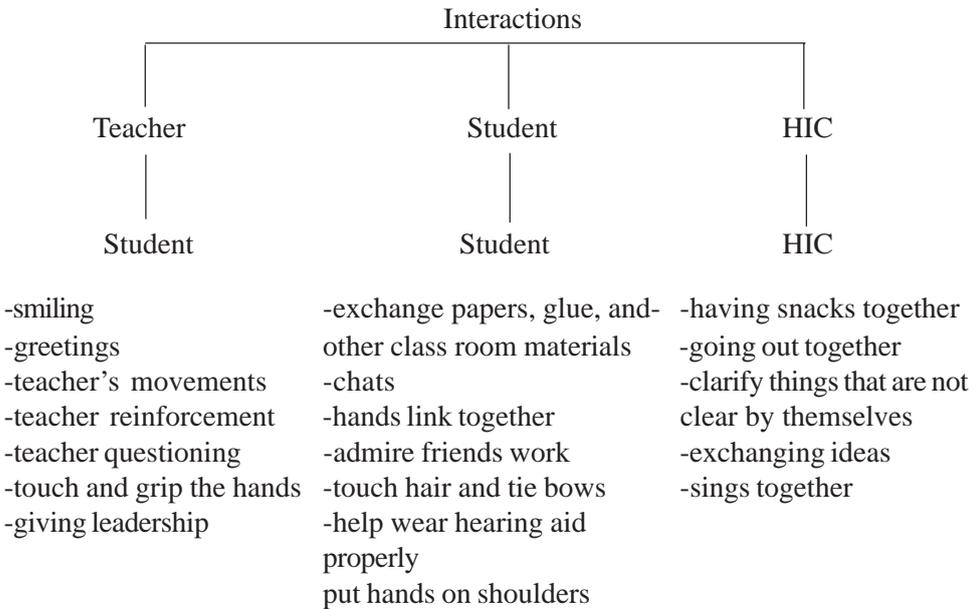


Figure 2: The interactions of the teacher-student, student-student and between two HIC

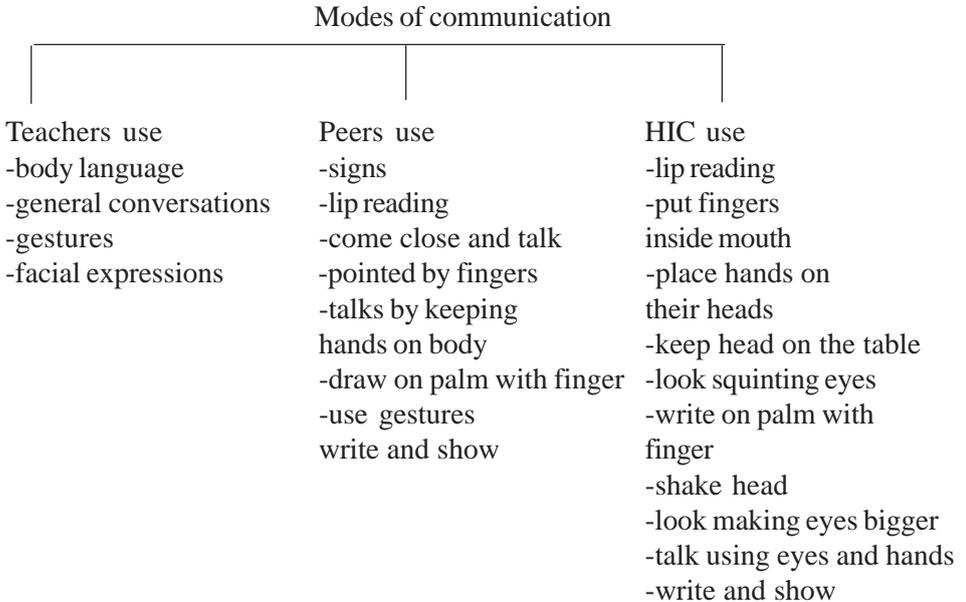


Figure 3 : Modes of communication used by teachers, peers and children with hearing impairment

Teaching and Learning strategies

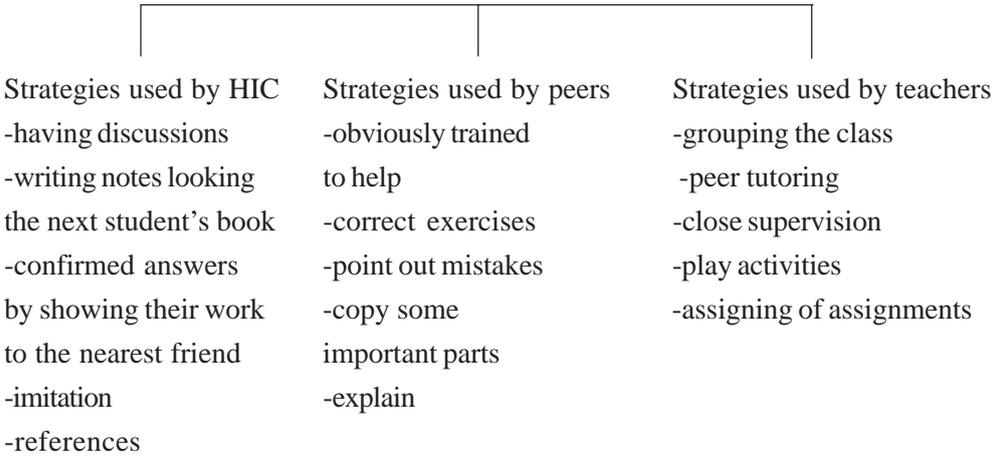


Figure 4 : Strategies used by children with hearing impairment, peers and teachers

Teaching and Learning aids

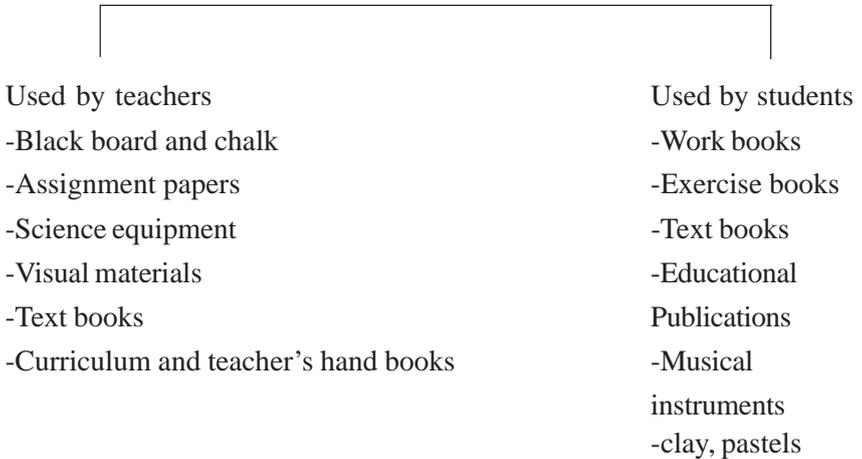


Figure 5 : The aids used by teachers and students in the teaching learning processes

Results

Interaction

The way the teacher-student and student-student interactions take place is clear and it can be seen how a good relationship between hearing peers and hearing impaired students are build up. Even a hearing impairment or communication problem does not affect negatively to the positive relationship. The help given by the non-hearing impaired peers to Himali and Nalika has helped them to do their classroom work successfully. The student-student relationship is stronger than the teacher-student relationship and these observations have shown us two children with hearing impairment who have also developed their own special connections with each other.

Modes of Communication

The teachers of this classroom purposely did not use any alternative communication modes, but body language and gestures helped the children with hearing impairment to understand the lessons. Students used special communication modes to communicate with the hearing impaired children without any knowledge of sign language neither the hearing children nor the hearing impaired children know formal sign language. Lip reading and writing on the palms were more conspicuous modes. Likewise all students in the class were talented in lip-reading therefore no communication problems arose. It is important to mention that these modes had been disseminated the whole class by the hearing impaired children.

Learning and Teaching Strategies

When considering strategies in the classroom that the teachers and students use for teaching and learning, there were not special strategies designed by teachers for the children with hearing impairment. Strategies used for the teaching process of the whole class helped Himali and Nalika. However, the peers used special strategies to assist the learning of the children with hearing impairment. Thus Himali and Nalika used special strategies to continue easy and meaningful learning. It is because of the help extended by fellow students that Himali and Nalika learnt.

Teaching and Learning Aids

Even though the importance of using teaching aids has been emphasized, this class used such things very little. However they utilized some aids that were commonly used in the teaching learning process. The assignment papers and workbooks could see as productive aids. All teachers did not use the blackboard productively even though they could have used it very easily. The students used educational publications but there was no guidance from the teachers. No special equipment was designed for Himali or Nalika, and no special attention was given by the teachers. However, the visual aids presented were occasionally very helpful.

Teacher's View

All the teachers hold positive attitudes about Himali and Nalika learning in a regular classroom. There were no problems in teaching subjects and they also accepted some students who were of a lower standard than Himali and Nalika in achievement level. All of them stated that Chathurika was giving powerful support to Himali and Nalika in their studies. No communication problem has been raised in the classroom, and the teachers were able to understand Himali and Nalika and they were able to understand the teachers. All teachers emphasized that good relationships had been developed between the hearing students and these two. The teachers have strong feelings for Himali and Nalika, even beyond sympathy, and they are also willing to develop their knowledge of how to teach children with hearing impairment.

Chathurika's, Himali's and Nalika's Experiences

It is apparent that chathurika's assistance has given great help to Himali and Nalika in the regular classroom. If Chathurika gave her assistance willingly and there were many strategies used for cooperative learning between Chathurika and Himali and Nalika. There was acceptance of Himali and Nalika in the classroom. Their peer groups have never rejected them. Himali and Nalika developed good relationship with the other students and Chathurika has had a special relationship with them and it was clear that Chathurika was committed to helping them. Himali and Nalika spread their communication modes in the classroom through Chathurika and other peers. All friends used different communication modes in a talented way and therefore no communication problems arose in the classroom. Himali and Nalika took maximum benefits from their hearing aids and they also used lip reading and other signs, gestures and body movements sufficiently. English is difficult for both of them and they like when visual materials are

available during the lesson, because they use vision rather than hearing in gaining information. Himali and Nalika have a good mutual relation and therefore they help each other in their studies.

Hindrance in the Classroom

There were no special methods or special teaching aids used for these children and which was seen throughout the empirical data. The two hearing impaired children took part in a hidden struggle to participate in the learning process within a traditional framework.

A peer who was dedicated to helping them compromised this struggle to a certain extent. All teachers spoke positively about the learning of the two hearing impaired children. However, within their conversation the two hearing impaired students said that the learning did not happen because of the teachers. Before going to the teachers or before answering a question they asked their friends. This was observed and came up during informal conversation. The teachers did not understand this condition.

Although the teachers were aware that Himali and Nalika received help from their friends, the data shows that the teachers were unaware that the girls checked every answer before showing them to the teacher. Because they always gave correct answers the teachers were under the impression that the students did not have difficulty in learning. Their difficulties were hidden in the system.

At the interviews the teachers highlighted the ability that the children had in doing their schoolwork. My observation showed that if the teacher's role remained as it is then these children would have a number of problems unless their peers helped them in their studies. Teachers thought that they could see when Himali and Nalika had a problem more easily than when the other students had the same problem. However, I did not see any difference in my observations.

The teachers knew that the hearing impaired children found it difficult to understand what they said. However, there were no remedial measures taken into account or used so far. Hence, even when they found out that the hearing impaired children had not understood what they were teaching they did not take any action to improve the situation. There was lots of important information that emerged from Himali and Nalika's informal conversations. E. g. the teachers' clear and loud voice, the necessity of saying the same thing a number of times (repetition) the need to sit in front of the class, the importance of visual information, can be stated as some. But the only thing that happened out of these was Himali and Nalika sitting at the front, and the teachers were not aware of the needs.

Teachers did not have an understanding how hearing aids are functioning. They did not know either how to operate a hearing aid or the importance of using the hearing aid daily. Research has discovered that there is rejection of the hearing impaired students in regular classrooms. However Himali and Nalika were both accepted.

The peer group helped them to remain in the regular classroom. Although it is accepted that hearing impaired children has to face communication problems in a regular classroom, the most conspicuous feature of this study was that language did not become a barrier in teacher-student and student-student communication. An apt exchange of ideas through total communication has taken place in the classroom, but in communication and learning we cannot say how much longer this system of communication is going to help the students.

When the children encounter more and more abstract concepts we will have to find out whether they will be able to delve deep and comprehend the concepts. The answer to this will have to be found in future research.

Obstacles in the Classroom

Through the observation I could see a number of obstacles that affected Himali and Nalika's work in the classroom. Teachers talked when facing the black board. This is a problem for Himali and Nalika. Himali and Nalika miss most information while the teacher's back is turned, and this happened regularly. The teachers did not care or were not aware of the situations. Likewise the students have to listen only to the teacher's talk during whole periods of 35 minutes. Lack of visual information and teaching aids and little activity created obstacles. Usually the teacher's gave oral instructions for exercises. If they had given written instructions Himali and Nalika could have read and understood well. The mistakes that were made by Himali and Nalika could be minimized if the teachers had given a choice and got them to select the required answer. Thus the teachers should have written examples on the blackboard when it was necessary but they did not do so. Another obstacle was that the blackboard could not be seen by the whole class, although it was a powerful learning material that teachers used. During Music lesson the teacher read letter by letter to help the children to write down notes. For examples w, r i, t, e-f o, u, r-f u, n, c, t, i, o, n and the teacher did not repeat after she spelt it out. This was an obstacle for the whole class.

Possibilities in the Classroom

There were things that helped Himali and Nalika in their learning in the regular classroom. If the sounds that emanate from the class could be minimized it would help them to gain greater benefits. Rubber bushes can be fixed to the legs of desks and chairs to minimize the extra sounds, as lots of noise made when they rub on the floor. This can be avoided by laying mats to cover the floor. If it is possible to move this class to somewhere else (it is close to grade one) it may prove fruitful for these children. It would make it easier to get Himali and Nalika's attention if they were in a covered classroom rather than an open one. In the open classroom there are too many environmental distractions for Himali and Nalika. For students like Himali and Nalika, who were trying to get information from the visual medium, it was a disadvantage to have a lot of stimuli out side the classroom. If possible, teachers should provide visual information for communication. It would help Himali and Nalika in learning as well as other students. These students can understand well if they have activities and visual aids in the lesson. Therefore other teaching methods should be worked out instead of lecturing. The need of a sign language will come up when Himali and Nalika pursue their studies. If possible it is useful to provide an interpreter, as it will help them to do their studies more successfully.

Discussion

This is a qualitative case study. The ethnographic research approach was used for the study. A classroom was taken as the case and this study provides a descriptive interpretation of how the children with hearing impairment took part in the learning process. The interactions between teachers and students and the communication modes and learning strategies were investigated and studied. This study explored how these students took part in the learning process. Next the practicability or inability of the concept of inclusion for hearing impaired students was studied. Although this study was confined to one classroom the finding and experiences that emerged will be useful to teachers, special education teachers, educators, parents and anybody who shows an interest in and concern about these children.

Lopez has stated thus about inclusive education.

Inclusive education implies that education is about learning to live and learn together with each other. Inclusive education is not about sameness. It is about a world where people are different. It is about what we can do to celebrate those differences by being together. (Lopez 1995. p. 13)

I have focused my attention on the ideas that Lopez has presented in her work. Accordingly, living and working together and learning from each other were practiced by the students of this class. This was seen when the data was analyzed. The hearing impaired children were not only physically present in the class, but were fully participating. However, there are many things that came to light from the study.

Many researchers have highlighted the communicative problem as the main problem that arises when a hearing impaired child in a regular classroom. The US Department of Education (1992) has stated that when a hearing impaired individual is to be directed to follow an inclusive programme, what matters most is language and communication. Davis, Elfenbein, Schum and Bentler (1986) have shown how the intensity of the hearing impairment affects language and educational performance. Yet in my study this was no great consequence. This did not become an overwhelmingly practical problem between hearing impaired children and their teachers and hearing impaired children and peer groups.

The two hearing impaired children had shared their own modes of communication with their peers. The students in the class were skilled in using alternative methods. Similarly the teachers pointed out that they were able to understand the ideas expressed by the hearing impaired children. Therefore communication problems did not crop up in this atmosphere. I would like to reiterate what Lopez had enumerated, that inclusive education is living together and learning from one another. I think this took place among the students of this class. The practical use of communicative modes by the whole class is a good example of this.

This, study also, emphasized the importance of the teacher-student and student-student relationship in learning. According to most researchers the interactions related to children with hearing impairment in the regular classroom were negative. E. g. Heward and Orlanscy (1989) highlighted that the minority groups were alienated in the classroom. Similarly, Quigley and Kretscluner (1982), and Lynas (1986) point out that such relationships are rejected by hearing impaired children as well as hearing children.

Vandell and George (1981) show that hearing children do not modify their use of gestures, touches and vocalization according to the needs of the hearing impaired children. However my study has been able to highlight facts that are different from those. It was seen through my study how children in the classroom adapted themselves to the needs of the hearing impaired children. My research indicated that hearing children can be an extremely useful source of support for the child with the hearing impairment. According to the data of this study, it was revealed that the two hearing impaired children did their studies with the special support of a peer.

Further I realized that the teachers had given the responsibility of two hearing impaired children to one particular peer. The two depended on the peer. It is believed that the support of hearing peers is a useful resource to children with hearing impairment, but dependence on the same peer continuously may be somewhat risky. These two hearing impaired children might come across problems if the helping peer was not able to come to school due to sickness or for some other reason. If the peer changes her school the hearing impaired children's education may be interrupted. If the peer changes her class at the end of the year, as often happens in Sri Lanka, the same problem may occur. Some teachers voluntarily help with hearing impairment but some do not. As a result, hearing impaired children face many problems in learning in the regular classroom. It is essential to create a feasible environment for children to learn independently.

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RESEARCH NOTES

Absenteeism Patterns of Grade One Children in Sri Lanka: A Longitudinal Study

A longitudinal research was initiated in 2002 to study student participation in primary school education and the way the students develop their competencies. Forty-three classrooms from forty-one schools representing the diverse social, cultural, economic, demographic, geographical and educational backgrounds of the country were the classroom and school samples and all new entrants to grade 1 in January 2002 to the selected classrooms were the student sample (1021). As one aspect of student participation, data on absent children were collected daily from classroom registers. A data collection sheet was used for the purpose and classroom teachers entered data into the sheets daily. The reason for absenteeism was marked either using letters sent by parents or where letters were not sent, through informal interviews held with children. The objectives were to find out absenteeism patterns during the year, to find out reasons for absenteeism and to identify associated variables for absenteeism. The Percentage of absenteeism was calculated and association of variables was tested using Chi square test (p -value is less than 0.05).

Only one child, (a girl) attended the school every day out of 1 021 children in the sample. The highest number of absenteeism was in the months of April, May and June. The Lowest is in January. 102 reasons for absenteeism could be identified. They were categorized into 12 themes, ie. Illness, minor accidents, social, religious customs, no reason given, influence of family members, student specific reasons, socio political reasons, school related reasons, economic reasons of family, climate, environmental reasons, transport related reasons, and no data on reason. The main reason for absenteeism was illness of children. Patterns of absenteeism during the year show that illness of children was the main reason for the each month of the year. Other than climate the other twelve variables; school type, ethnicity of school, medium of instruction, socio economic zone, province, relief zone, climate, sex of child, ethnicity of child, religion, residence, mode of transporting to school, are associated with the absenteeism of students in grade one.

Correspondence:

G. Kodituwakku

*Department of Research and Development, National Institute of Education
Maharagama, Sri Lanka*

D. A. S. D. Ratnayake

*Department of Research and Development, National Institute of Education
Maharagama, Sri Lanka*

Educating the Child in a Peaceful and Conflict Free School: Good Practices in Sri Lankan Schools

This study envisaged exploration of the state of the art of selected five schools that have been pinpointed as having good school practices in the field of education, peace and conflict resolution. The objectives were to explore peace concepts embedded in the good practices of school processes, and to identify causal factors for the peace related processes.

Case study method was employed. A Convenient sampling method was used to select Deputy / Assistant Principals (7), teachers (50), Grade 11 students (50) and parents (50) to collect qualitative data through in-depth unstructured observation, in-depth interviews and conference cum reflective incident analysis. Content was analyzed on curriculum material to identify sections that deal with peace education and to evaluate the prevalent practice at classroom level. Correlation Coefficient of responses in questionnaires was calculated and z test was used to determine the significance of the correlations. Qualitative data were coded to identify specific patterns of good practices and they were elaborated in narrative style citing qualitative judgments as vignettes. In the report, a rich and vivid description of events in the respective schools emphasizing chronological order of school history, individual actors' role in good practices, school processes in a day and during the year were emphasized.

Good practices in peace and conflict resolution in nine school processes (School management, Classroom management, Student development, Staff development, Teaching learning process, Co - curricular activities, School environment building, Community relations and cultural harmony) and peace concepts embedded in these processes were identified. The role of the Principal was an influential factor in deciding on good practices. The cooperation of teachers, students and school community are centered on the Principal's role and personality, which is 'Sri Lankan' in nature. The

child friendly approach in planning school and classroom programmes, implementing them in fulfilling needs of the child and sensitizing community needs have contributed to the development of a peaceful environment in the school. Good school practices in co curricular activities were centered on developing the school premises beautifully, inculcating peaceful minds and developing the behavioral patterns of students and teachers.

Correspondence:

G. Kodituwakku

*Department of Research and Development, National Institute of Education,
Maharagama, Sri Lanka*

D. A. S. D. Ratnayake

*Department of Research and Development, National Institute of Education,
Maharagama, Sri Lanka*

The Research into the Training Programme Offered by the National Institute of Education for the Trainee Graduates

The study was carried out to identify the perceptions of graduate trainees attached to the National Institute of Education (NIE) to improve the quality of training provided. Survey research method was used. Thirty-five graduates attached to the NIE were the sample. A questionnaire and a brainstorming session were the data collecting techniques. Quantitative data were analyzed to calculate percentages. Qualitative data were read to identify patterns of perceptions.

The expectations of the trainees were to gain training to suit their field of study and through practical experience. An overall knowledge about all the departments of the NIE was sought.

The advantages of the training programme were, easy access to the library, getting acquainted with the working conditions to the attached department, capacity building in the relevant academic field, opportunity of working together with officers with higher academic, professional qualifications and experience, and being provided on the job training in a reputed educational institute.

The disadvantage of the training programme is the assignment of unplanned and unfocused tasks with objectives, which are not clear to the trainees. Since there is no prior teaching experience, problems have arisen when working in an institute, which is the academic arm of the Ministry of Education.

Management problems in the training programme are, difficulties in receiving their monthly allowance, absence of a specific officer appointed to solve the problems of trainees, and difficulties encountered in performing non-academic duties.

Directing graduates according to their field of study and interests, providing formal and effective training, providing them with opportunities to discuss their problems, were the suggestions made.

Correspondence

N. D. Dissanayake

*Department of Research and Development, National Institute of Education
Maharagama, Sri Lanka*

Competency in Pre Writing and Writing of Grade One Students: A Longitudinal Study

As a part of a longitudinal research initiated in 2002, competency of writing, included in the set of communication competencies, was measured using an activity given to 1021 children from 43 Grade 1 classrooms in 41 schools selected to represent the diverse social, cultural, economic, demographic, geographical and educational backgrounds of the country. The specific objectives of the study are to identify the competency of writing basic shapes within a spacious area, writing the same basic shapes within a limited area and on a sheet of blank paper, to analyze competency in writing words adjoining dotted lines, to analyze the competency of writing words without 'pillam' (Affixing vowel symbols used in Sinhala Language) while looking at them and listening to them, to analyze competency in writing sentences with 'pillam' while looking at them and listening to them and to analyze the competency of writing the child's own short name. Nine instruments were developed to collect data during the Grade one period at different intervals. Each instrument was specified for a certain aspect competency and the ten instruments were representative of the hierarchical nature of competencies in writing. Each activity sheet was administered to children by their respective class teachers, who were trained for the purpose.

Development patterns of the nine selected nine aspects of writing were identified. The percentage of students regarded as achieved and not achieved competencies in pre-writing and writing by competency level, at the end of Grade one, can be summarized a follows.

Instrument Number	Competency level	% of students acquired competency	% of students not acquired competency
6.9	Writing the child's own short name	39.24	60.76
6.8	Writing sentences with 'pillam' while listening to them	27.16	72.84
6.7	Writing sentences with 'pillam' while looking at them	54.76	45.24
6.6	Writing words without 'pillam' listening to them	45.69	54.31
6.5	Writing words without 'pillam' while looking at them	70.28	29.72
6.4	Writing letters/words adjoining dotted lines	84.06	15.04
6.3	Writing the same basic shapes in a blank paper	70.04	29.06
6.2	Writing the same basic shapes within a limited area	76.71	23.29
6.1	Writing basic shapes within a spacious area	85.15	14.85

Pearson chi-square test was used to identify the association between nine competency levels with school, country and child related variables and explanatory variables for the achievement of competency were identified.

Correspondence:

G. Kodituwakku

*Department of Research and Development, National Institute of Education
Maharagama, Sri Lanka*

D. A. S. D. Ratnayake

*Departement of Research and Development, National Institute of Education
Maharagama, Sri Lank*

Baseline Survey on Schools to be Exposed to the Programme for School Improvement (PSI)

PSI is a concept related to decentralization of decision making authority to the school site and this programme will be put into practice in selected education zones in the 8 provinces in Sri Lanka from 2006 onwards. Under PSI, the schools will be mainly given autonomy for school budgeting, curriculum implementation, use of physical and human resources and teacher training. The present study attempts to identify the prevailing management system of the pilot schools with a view to identifying the impact of the PSI through a comparative study after two years of its implementation.

The study was conducted on a sample of 40 schools, five in each of the 8 zones. The selections of 5 schools were done in consultation with the planning Directors of each zone. They were asked to name any five schools from their zone which belong to each category of 1 AB, 1 C Navodya, Type 2 and Type 3. It is Out of this list of 25 schools that the research team selected the schools for the study.

Data collection was done mainly through in-depth interviews using 5 interview guides. The principals, teachers, students, parents, and the community members of each school were interviewed over management practices in the areas of planning, organization, management of the curriculum, co-curricular activities, teachers, students, monitoring and evaluation, finance and administration and parent and community involvement. In addition to this, background information such as number of students, teachers, examination results, buildings were collected through a separate information sheet.

Selected qualified data collectors from the respective zones and some of the officers of the Department of Research and Development were involved in the process of data collection. They were given a full training on data collection before they went to the field.

Data collection for the study will be completed by mid January 2006 and school profiles for each school will be prepared by analysing the gathered data.

Correspondence:

M. A. A. S. Dias

*Departement of Research and Development, National Institute of Education
Maharagama, Sri Lanka*

Learn, Love and Live together unto Fullness: Good Practices on Peace at Tn/St. Mary's Girls' College

Tn/St. Mary's Girls' College (name is cited with consent), was one of the five schools selected to identify the-good practices in peace and conflict resolution followed by the Sri Lankan school system. Observations, questionnaires, informal interviews, & document analysis were the data collection techniques. Data from questionnaires were collected from ten students in grade eleven, ten of their parents/guardians and ten teachers who taught them. A number of important themes were identified through informal interviews and observations and the ten students were asked to write essays on them. Exhibits, models, quotations, photos and written sources maintained in the principal's office and in classrooms were considered as data for document analysis. Good practices related to nine school processes were identified.

The **school management** was completely built up on the vision of the school. "Love Learn & Live together unto fullness". All tasks in the school were decentralized. Every process in school was linked to each other with good communication chain. It helped to build a peaceful, conflict-free environment. The Principal's flexibility, humanity and capability helped to build a peaceful school environment. A large portion of work related to **classroom management** was assigned to the students. Every classroom in the school had a common' systematic plan and due to this no conflicts emerged among students or teachers. The Monitor was responsible to prefects for their workload. The student of this school was directed towards leadership practice, through **student-centred management**. The characteristics of social harmony and environmental harmony were developed in students through this process. This also induced other students in the school to acquire such characteristics making the classroom a joyful place. The duty list prepared for monitors beginning from the time they entered the school premises in the mornings effects the student development thoroughly. There was the opportunity for students to engage in all activities such as co-curricular activities, extra curricular activities, cleaning of classrooms and the school premises. Accordingly, every student has to take on responsibility and become accountable to his or her immediate higher management and to fare higher management. Hence we could observe a high degree of attitude development in students. **Teacher development** and **Teaching-learning process** promotes the teaching-learning process. **Co curricular activities** built peace in the school system through cooperation between various types of societies. **The School premises** developed with the help of **the school community** have developed an environment of **Cultural harmony**.

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Correspondence:

D. A. S. D. Ratnayake

*Departement of Research and Development, National Institute of Education
Maharagama, Sri Lanka*

Assessment of IT Teacher Training Needs in the School System

This research study aims at the assessment of IT training needs in the schools system of Sri Lanka in 2004. This is the first study conducted after numerous donor-assisted programmes introduced computers to the school system. The main objective of the study was to identify the training needs of IT teachers in the schools system and to provide the basis for the development of course materials for IT teacher trainers. The specific aim was to identify the present situation with regard to the availability of functioning computers and IT teaching learning process as well as the future needs for IT teacher training according to the opinions of stakeholders. The identified gap between the present and future needs would provide the basis for the development of IT training materials.

A population of school with computer facilities and a random sample of schools with functioning computers, representing eight provinces were selected for the survey. The instruments used were questionnaires administered by trained data collectors. Data were individually collected from 120 principals, 219 teachers, 44 pupils and 23 IT co-ordinators. Document analysis was done to triangulate the data. Percentages supported by significant tests and Spearmans rank correlations were use to analyze data. The principal teachers and • student have positive views on the usefulness of the computer as a teaching tool. According to principals, time allocated for use of computers was more than 20 hours per week. According to teachers in-charge of IT laboratories the period of their use of IT was 6-10 hours. This difference shows the practical implementation constraint in ICT at school level. IT teachers in schools had followed different ad-hoc courses, without uniformity in their training. As a result, technical training and relevant resource materials deserve the highest priority. Use of education software across the secondary curriculum had reached a few schools only in year 2004. However the highest priority for science subjects is the use of educational software across the curriculum. Recommendations are proposed on three levels. Updating IT policy according to requirements, establishment of information net-work among deferent stakeholders and strengthening of monitoring in IT education in the schools system, are major issues at the administrative level. The establishment of a

proper mechanism for the maintenance of existing computers and IT training is a need for process level improvement.- Appropriate educational software and resource materials are also needed to underpin -the task at the working level.

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Correspondence

M. N. S. Edirisinghe

Departement of Research and Development, National Institute of Education, Maharagama, Sri Lanka

M. A. P. Munasinghe

Department of Research and Development, National Institute of Education, Maharagama, Sri Lanka

THESES ABSTRACTS

Literature in English Language Teaching: Original Text vs. Simplified Version

Indira Jinanjalie Pragnaratna Atapattu

Abstract of the thesis submitted to the University of Colombo for M.A. Degree, 2003

An investigative -study of how simplified / authentic literary texts affect the acquisition of a second language (or, target language, in this context) in Sri Lankan University undergraduates who are at low level of proficiency in that language, was carried out in the research in connection with this thesis.

The study focuses on whether it is Simplified or original literary texts which help better in enhancing the acquisition of a second language. It also focuses on whether (if either type of the above - simplified or original - texts helps better acquisition) a development sequence could be detected in the acquisition of certain grammatical categories of the L2 (second language).

The study raises the question that authentic text which suit the learners level of knowledge of the target language vocabulary, structures, etc, that is, texts, which are not too much above the learners level of competence, could be used in the class room, instead of distorting a literary text by simplifying it in order to make it suitable for the learner's level of knowledge.

It also suggests that short stories particularly those based on a background which the learners are familiar with, discussing issues which they can identify or empathize with could be made materials as complete literary texts in the language class room. The possibility of using post colonial short stories was suggested in this context.

The learner's proficiency was tested before and after the teaching of literary texts, simplified version to one group and authentic ones to other, by means of both quantitative (i.e., close tests) and qualitative (i.e., informal conversation / discussion, classroom observation) assessment methods. Qualitative methods were used to support further and strengthen the data obtained by quantitative means.

The main findings of the study suggest that literary texts have a better effect on ESL (English as a second language) learners who are at a lower proficiency level in enhancing, at least a little more than simplified versions do.

This study also reinforces the point that there is a sequence in the acquisition of different grammatical categories.

Language Acquisition and Motivation Among Learners of English for Professional and Administration Purposes: A Linguistic Social Psychological Study

Minoli Samarakkodi

Abstract of the thesis submitted University of Colombo for M. Phil Degree 2001

The target population of this study comprises the largest group of bilinguals in Sri Lanka who clamour to learn English for professional and administrative purposes. In order for these bilinguals to effectively discharge the duties associated with their position as at present and progress beyond the position they currently occupy on the social and occupational scale, they will need to achieve a level of competence in English that will enable them to engage in the kind of thinking and associate praxis which modern administration requires. This study attempts to investigate why a majority of them in spite of the demand for English and the opportunities available for learning it, generally fail to achieve this level of competence in the language.

The study seeks to investigate the acquisition of English, among these particular groups of bilinguals, in terms of social psychological factors such as motivation and attitudes to learning English. It attempts to establish the social psychology of second language acquisition as a crucial dimension by explaining how the tremendous socio

historical, linguistic- political changes that have taken place in Sri Lanka, in terms of the status of English from colonial times to the present and the resulting inter-group dynamics, have developed clusters of attitude which can be identified as a particular type of very complex integrative motivation to learning English. In doing so, this study further seeks to ascertain that it is reasonable to hypothesize that the more ambivalent or negative the informant's integrative motivation the less positive the linguistic outcome is likely to be.

Research studies on attitudes / motivation towards learning English have been criticized in recent times for not dealing with complex issues such as the socio-historical and inter group aspects of second language acquisition. A major reason has been the strong initial influence of quantitative social psychology on language learning motivation, which is necessary limiting given the intricate and multilevel construct of motivation, especially multilingual contexts. A qualitative approach has been found to be more appropriate to uncover the complex interaction of social, cultural and psychological factors within the individual learner. This study adopts such an approach in order to describe, but more importantly explain, that in a multilingual context such as Sri Lanka, where English holds a historically determined outsider' status, but continues to be the de facto language of prestige and power, a simple dichotomy of integrative and 'instrumental' motivation is not feasible. Further, the complexities and ambiguities of this integrative motive make the straightforward relationship that is claimed to exist between second language achievement and attitudes motivation, a far more complex one in the Sri Lankan context.

BOOK REVIEWS

Vishishta Pasalak Sandaha Adyapana Salasumkaranaya

(Educational Planning for an Excellent School)

The main challenge we face today is to build an efficient and effective system to produce Sri Lankan citizens who are capable of facing both local and international challenges in the century. However, it is evident from the unsatisfied educational status of the country that the expectations of education have not been reached. Here, it is clear, that education must be carefully planned in order to achieve future educational expectations.-In this regard, the ministry of Education has taken great efforts since 1980 to make the educational planning process a school based endeavour. However, the results were not commensurate both quantitatively and qualitatively. Especially the bottom up planning approach introduced utilizing the school community and other related bodies have become alienated. However, it is very essential that we must have such a system to improve the quality of the school system.

As a result of this, the principals were given necessary guidance to make school based planning from the Department of the School Management and Education Administration of the ME at Meepe. In such a context the book - Educational planning for an excellent school - written by Hemasiri Ranasingha provides excellent practical guidelines and useful information to the principals. It is clear the author as the Director of the above Department is equipped with much practical experience in this field. It provides solutions to the problems that arise at the principals' seminars and it also gives knowledge in simple and optimal ways to any educational manager who wants to broaden his understanding in the field of educational planning for an excellent school.

The first three chapters have been allocated for approaches to Educational planning, definitions and related activities, respectively. These topics have been explained an effective manner emphasizing ways of adopting the educational planning to the school level.

The fourth and fifth chapters of this book explain how to maintain a data base on educational management at school level, the policies basically used and approaches taken in educational planning. Therefore, this text provides better approach to educational planning for an excellent school and it certainly motivates both the educational managers and principals to implement such programmes. Taken in this sense, this is a rare text that describes educational planning at the school level

It need not be said that, without strong dedication and the concentration mixed with experience, this kind of work for the nation would not have been possible.

Furthermore, this text gives an essential summary of the field of educational planning for principals, educational managers and all those who are interested in this field.

Mr. Hemasiri Ranasingha, The Director of the Department of School Management and Education Administration of the ME, who made this work a success should be offered the gratitude of all personnel concerned with educational planning for his great endeavour in presenting an excellent book on the field.

This book should be recommended as a hand book on educational Management to all teachers, principals and all the personnel concerned with Educational Management.

S. U. Wijerathna

Ministry of Education and Higher Education