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# Factors Affecting the Academic Performance of Agriculture Undergraduates: a Case in Faculty of Agriculture, University of Ruhuna

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## Abstract

*Academic performance of the undergraduates depends on a range of factors. Objective of this study was to understand the factor affecting the academic performance of the undergraduate students of the Faculty of Agriculture, University of Ruhuna, Sri Lanka (FAUR). All (28) the first class holders (FCH) and 27 randomly selected second class upper division (SCUD), 15 second class upper division (SCLD), 13 pass and 31 repeater (RS) students, representing four semesters were used for the study. Data were collected using personal interview method with the help of pre-tested interview schedule. Majorities (90%) of FCH were girls while 68% of RS were boys. Academic merits at the university entry had no effect on the undergraduate performance. FCH showed higher level information seeking behavior than others. GPA of students showed a significant correlation with the library and computer usage. Library was the most preferred study place of FCH whereas it was the hostels for RS. FCH had higher lecture attendance (95.2%) and, prepared short notes (71%) than RS (73.8% and 41%, respectively). FCH revisited the lecture notes regularly as compared to the repeaters. Meanwhile 81% of RS revisited the lecture notes only during the examination period. Majority (75%) of FCH preferred to study individually while repeaters (59%) preferred to study as groups. English proficiency of the FCH was significantly better than that of repeaters. It was concluded that not the academic merits at the university entrance but the study habits and English proficiency are the main determinants of the academic performance of BSc Agriculture undergraduates.*

**Key words:** undergraduate performance, study habits, Z score, GPA

## Introduction

The degree class level of the degree may indicate either the graduate's ability or his knowledge acquired human capital. Several studies (Naylor *et al.* 2000, Jeremy and Naylor, 2001) have shown that undergraduates' performance has a direct impact on the post-university earnings. Under semester based course unit evaluation system, failing of one or few course units exerts a tremendous pressure on the student. Furthermore, failures cause a series of administrative difficulties as well. A range of factors such as academic performance at university entrance (Arbona and Novy, 1990; Moore, Jensen, Hsu, & Hatch, 2002; Young & Sowa, 1992; Jeremy and Naylor, 2001), age, gender (Epstein *et al.*, 1998; Jeremy and Naylor, 2001), family background, (Yvonne Beaumont Walters, Kola Soyibo, 1998), lecture attendance (Rodgers, 2001), type of secondary school (Yvonne Beaumont Walters, Kola Soyibo, 1998), distance from home to university (Chansarkar and Mishaeloudis, 2001) have been identified as the determinants of the undergraduate performance. Studies conducted with Sri Lankan medical students (Canagaratne, 1985, Perera and Weeresinghe, 1997, Pallegama, Mendis and Thattil 1999) have demonstrated a significant association between English Language ability and the performance in different stages of MBBS course.

Established in 1978, the faculty of Agriculture, University of Ruhuna (FAUR) is the second oldest and largest Agricultural Faculty in Sri Lanka. Based on the selection done by the University Grant Commission (UGC), the faculty enrolls 150 students per year to follow four year BSc (Agriculture) course. BSc (Agriculture) degree is four year special degree. The course is conducted as a semester based course unit program. The evaluation system, though vary from course to course to some extent, mainly consist of continuous evaluation component, end semester theory and practical examinations. In Sri Lanka, medium of instruction in secondary schools is Sinhala. English is taught as a subject. The level of English is not considered as a qualification in University entrance. However, upon the entry to the universities students follow an intensive English course. The BSc (Agriculture) course of the FAUR is conducted in English.

Even though, a fair percentage of students perform well in examinations, around 40% of the students in every batch of students fail one or few courses. A great deal of heterogeneity in terms of university entrance academic merits (as measured by the Z score), English proficiency and socio-economic background exists among the students. The performance of students may be related to those entry qualifications and background. In addition, performance may also be related to the on campus variable such as students study habits. Agriculture is one of the few professional degree courses offered by a number of Sri Lankan universities. No scientific study has been done to determine the factors that affect the performance of agriculture undergraduates. The objective of this study was to determine the factors affecting the academic performance as reflected by the semester level results of BSc Agriculture undergraduates of the FAUR.

## 2. Methodology

The procedures followed by Ranaweera (1972), Gunasekara (1991), Syed and Naqvi (2006), and Norhidayah *et al.* (2009), with minor modifications were used to develop the research design for this study. Data were collected during the third quarter of year 2010. First class holders of different semesters were selected for the study. Other respondents were selected by using simple random sampling methods with the help of the result sheet of first, second, third and fourth year second semester examination of B Sc in agriculture. The sample consisted

of 28 FCH and 27 SCUD, 15 SCLD, 13 general pass and 31 failed/referred students. Data collection was done by using the personal interview method with the help of pre-tested interview schedule. A draft interview schedule was initially structured based upon objectives and data requirements for this study. Then, this draft interview schedule was pre-tested. Based on a pre-test, the interview schedule was suitably modified.

GPA and the class of the semester examination were considered as dependent variable. Numbers of independent variable which positively or negatively influence the result of the undergraduate student were taken into consideration as the independent variables of the study. Gender, number of GCE (A/L) attempts, A/L result (Z score), information seeking behavior (ISB), attendance rate for undergraduate classes, library usage (number of library visits per week, number of library books uses per week, number of library visits at examination period and purpose), computer usage, revisiting of notes, preparation of short notes, study habitat (individual reading or group reading), GCE (O/L) English result, results of the Proficiency of English course conducted by the university, general English ability (GEA), attending to helping classes conducted by the peers, family education, income, family support, participation to sports and extra curriculum activities and individual time management habits were measured empirically as independent variables. Karl Pearson's product movement correlation test and factor analysis were used to analyze the data.

### 3. Result and discussion

The data analysis is divided into two sections, such as analysis on respondents' profiles and demographic variables and analysis on relationship of students' performance and respondents' profiles and demographic variables.

#### 3.1 Respondents' profiles and demographic variables

##### 3.1.1 Gender

It has been shown that female students out perform males in psychiatry (Omigbodun and Omigbodun, 2003) but not in mathematics (Hyde *et al*, 1990) or importantly in Agriculture (Smith and Naylor, 2001). However, in this study gender had significant correlation with undergraduate performance (Table 8) and females clearly outperformed males (Table 1). Among the FCH an over whelming 90% were females whereas among failures 68% were males. An analysis of the results of BSc Agriculture graduates of the FAUR over 30 years (Mudalige *et al*, 2010) has also clearly shown that females outperformed male counterparts. It is not clear the reasons for female dominancy in undergraduate performance in the FAUR.

Table 1: Gender and number of GCE (A/L) attempts of different class holders

Variable		FCH	SCUD	SCLD	RS
Gender	Girls	90%	60%	54%	31.8%
	Boys	10%	40%	46%	68.18%
		28 (100%)	27 (100%)	15 (100%)	44 (100%)
Attempt	First attempt	7%	14%	6%	45.4%
	Second attempt	71%	40%	53%	47.7
	Third attempt	215	46%	41	6.8%
		28 (100%)	27 (100%)	15 (100%)	44 (100%)



### 3.1.2 University entrance academic merits (A/L Z score)

Z- score mark is used to select the student to the universities in Sri Lanka. It is the major indicator of the students' academic performance in GCE (A/L) examination. The Z score of the selected sample varied within a wide range from 0.9898 to 1.5678 with the mean of 1.3564. The average Z score of the FCH, SCUD, SCLD and RS were recorded as 1.25244, 1.46353, 1.34085 and 1.19314. Statistical analyses however revealed that Z score had no effect on the undergraduate performance as indicated by the class structure (Table 8).

The number of A/L attempts taken to enter into the university also had no effect on academic performance. Among the FCH, there were 21% students who entered this university in their 3<sup>rd</sup> attempt (the maximum number of attempts one can get). Meanwhile among repeaters, 45% were first attempt students. The A/L score and number of A/L attempts, taken clearly suggest that the academic merits at the time of entry to the university has no effect on on-campus performance of the undergraduates. A number of Sri Lankan studies have shown that A/L performance had no effect on undergraduate performance of Agriculture (Mudalige *et al*, 2007) and medical (Canagaratne, 1985, Perera and Weeresinghe, 1997, Pallegama, Mendis and Thattil 1999); Pushpakumara *et al*, 2011) students. These findings are in line with those of others who found weak (Montague, 1995; Nettles, Theony, and Grosman, 1986) or no correlation (Arbona and Novy, 1990; Young and Sowa, 1992; Moore *et al*, 2002) between university entry level and undergraduate performance. However, recently, Hewage *et al* (2011) showed a significant positive relationship between A/L results and medical undergraduate performance.

### 3.1.3 Sources of information

There was no significant relationship between the result of undergraduate students and their sources of information. Nevertheless, compared to RS, FCH relied on teacher for a source of information. It is interesting that even among FCH, there were no regular journal users. A recent study with medical undergraduates (Pushpakumara *et al*, 2011) has shown only 9% used journals at least once a month.

Table 2: Sources of information

Medium	FCH			PRS		
	Regular(%)	Occasionally(%)	Never(%)	Regular(%)	Occasionally(%)	Never(%)
Radio	54	43	04	66	18	16
Television	71	21	07	77	18	05
Newspaper	71	25	04	64	29	07
Journals	00	61	39	4	16	80
Teaches	43	57	00	23	48	30
Seniors	43	46	11	68	16	16
Other personals	68	25	07	89	09	02

### 3.1.4 Attendance for lectures

FCH have shown regular attendance for lectures than repeaters. Mean attendance of the first class holders, second class upper division, second class upper division and pass or referred students were recorded as 95.2%, 91.9%, 95.6% and 73.8%. Statistical analyses have proved that regular attendance for lectures helps significantly to get good results. Some previous studies (Norhidayah *et al*, (2009), Collett *et. at*, 2007; Stanca (2006), Chow, 2003; Rodger (2001), Marburger (2001), Romer (1993) have reported a positive correlation between lecture attendance and undergraduate performance on various disciplines whereas Park and Kerr, (1990) could not find a significant relationship.

### 3.1.5 Library usage

Class holders were frequent library visitors than repeaters. However, Table 3 clearly illustrates that among both FCH and RS, the library visits were higher during examination period than during the semester period. GPA of students was significantly correlated with the library usage. Library was the popular place of study of FCH during the examination period. (64%). Nevertheless, popular place of the repeaters was hostels.

Table 3: Library usage

Term period	Visit to the library	FCH(%)	RS(%)
During semester	Every day	07	00
	Several days per week	6	20
	Once a week	18	25
	Once a month	14	55
During only examination period	Every day	64	25
	Several days per week	11	45
	Once a week	21	11
	Once a month	04	18

### 3.1.6 Computer usage

Utilizing computer was high in FCH as compared to RS. Average computer usage per week of the first class holders, second class upper division, second class upper division and pass or referred students were recorded as 2.96, 2.52, 2.67 and 2.27 hours. CGPA of students was significantly correlated with the computer usage.

### 3.1.7 Short note preparation and Revisiting of lecture notes

Majority (71%) of FCH and only a 41% of repeaters have prepared short notes. 46% of the FCH revisited the lecture notes once a week whereas majority of (82%) repeaters revisited lecture notes only during examination period. Findings of this study were supported by the many of previous studies. (Norhidayah *et al*, 2009; Felder and Brent (2003), Wilke (2003) and Hake (1998)) have also found similar results.

Table 4: Revisiting of lecture notes by the FCH and PRS

Revisiting of lecture notes	FCH(%)	PRS(%)
Daily	04	00
Few days a week	14	02
Once a week	46	16
Once a month	04	00
Only due to exams	32	82

### 3.1.8 Individual or group studying

Though there was no significant difference, majority (75%) of FCH preferred to study individually while 59% repeaters prefer as group. It seems that FCH and good students may need little help of others and thus prefer to study alone. Schindler (2003) found that mixing abilities helps weak students; however the effect of such practices on good students is negative. Study habits such as high lecture attendance, library visits, group learners during examination and short note preparation may benefit for repeaters. However, the results showed that repeaters engage in “active studying” mainly during examination period.

### 3.1.9 General English Ability (GEA)

Medium of the class instruction and evaluation in the FAUR is English. The FAUR conducts an English course and “Proficiency Certificate in English” is awarded to those who complete level III of the course. Also, to be eligible to graduate, one should at least pass the level I of the course. The English proficiency of the undergraduates was measured by their GCE (O/L) results and the level they passed in the “Proficiency in English” course. Table 5 clearly illustrates that the majority of 1<sup>st</sup> and 2<sup>nd</sup> upper class holders have completed the English level examination whereas 52% repeaters are yet to complete at the level I of the course. The gravity of the problem of poor English knowledge is further highlighted by the fact that 56% of repeat students and 14% FCH translated their notes to *Sinhala*. Hewage *et al*, (2011) also showed that poor English proficiency was a serious problem for Sri Lankan medical students as well.

Table 5: Qualified English level examination of different class holders

	FCH(%)	SCUD(%)	SCLD(%)	PRS(%)
No	36	41	07	52
Level I	07	03	20	20
Level II	14	26	53	25
Level III	43	30	20	03
Total	100	100	100	100

### 3.1.10 Attending helping classes done by peers

During the examination period, seniors and good students of the same batch conduct helping classes. Both FCH and repeaters preferred to attend these helping classes but FCH mainly served as the resource persons in this type of helping classes. Positive effects of this type of peer helping classes have been reported by several authors (Giuliodori, Lujan and DiCarlo 2006; Rao and Di Carlo, 2000).

### 3.1.11 Family Background

Family income had no significant effect on the performance of the students. Some authors (Agus and Makhbul, (2002); Checchi, (2000) have shown that students from families of higher income levels perform better in university, compared to those who come from families of lower income brackets. Meanwhile (Syed Tahir Hijazi and Raza Naqvi, 2006) found that there is negative relationship between student performance and student family income. The absence of the effect of family income on students' performance may be due to the extensive financial and other supports enjoyed by Sri Lankan undergraduates. Majority of the Sri Lankan undergraduates receives a scholarship or bursary and largely subsidized hostel facilities and meals at university cafeterias. Part time job engagements are very low, even among those who came from low income families.

Results of this study indicated that education of the family members' was positively and significantly influenced the performance of the students. This result is supported by Ermisch and Francesconi (2001), Agus and Makhbul (2002). Possibly the experiences and advises of the educated family members may be helpful for students to adjust academic environment of the university.

### 3.1.12 Participation to sports or extra curriculum activities

Repeaters had higher social participation and engagements in extracurricular activities such as sports than first class and second upper holders. Nevertheless, FCH were also following other causes viz. CIMA, BIT and HRM etc than repeaters. Here there was no correlation between examination results and participation to sports and extra curriculum activities. Norhidayah *et al*, (2009) also found no relationship between undergraduate performance and their extracurricular engagements. However, Lauren Sparkes (2004), Marsh and Kleitman, (2002) reported positive and significant relationship for this two variables.

Table 7: Participation to sports or extra curriculum activities by different class holders

	<b>FCH(%)</b>	<b>SCUD(%)</b>	<b>SCLD(%)</b>	<b>RS(%)</b>
Sports	58	70	66	80
Extra	50	48	66	65
Office bares	25	33	47	36

### 3.1.13 Time management skills and goal setting

FCH had showed significantly better time management skills than repeaters. Only 22% from the students had an idea about grading and class structure of the university at the

beginning of their academic works. Majority (70%) of FCH had a goal to get a first class at the beginning of the semester worked toward it.

### 3.2 Factor affecting to the results

The correlation showed that variables such as library and computer usage, class attendance, regular revising of notes, short note preparation, GCE (O/L) English result, English level examination result, family education back ground and time management skills (component one) have significant positive correlation with undergraduate performance (Table 8). Whereas, gender, number of GCE (A/L) attempts, A/L result (Z core), sources of information, study habits (individual reading or group reading), attending to helping classes, family income, participation to sports and extra curricular activities had no significant effects on undergraduate performance.

Table 8: Factors affecting the result of the BSc Agriculture undergraduates of the Faculty of Agriculture

Variables	R value with GPA	Variables	R value with GPA
Z score	0.147 (p=0.131)	O/L English results	0.354 (p=0.000)
ISB	-0.010 (p=0.920)	Level examination	0.309 (p=0.001)
Library usage	0.482 (p=0.000)	GEA	0.262 (p=0.006)
Computer usage	0.337 (p=0.000)	Family income	0.173 (p=0.076)
Attendance	0.488 (p=0.000)	Family education level	0.307 (p=0.001)
Number of revisits	0.234 (p=0.015)	Family support	0.140 (p=0.152)
Making short notes	0.239 (p=0.013)		

Factor analysis was also confirmed above findings (Component one in the Table 9). Results clearly showed that not the university entry level academic merits (z score), but English proficiency and study habits are main determinants of the undergraduate performance. In general repeaters did not adopt good practices such as attending lectures regularly, preparation of short notes, revisiting of notes, library usage. The university entrance examination; GCE (A/L) is such competitive examination that only 20 000, out of 300 000 who sit the examination are selected to the universities, on their Z score. Therefore, it is unlikely that those repeaters had not been aware of the importance of good practices that are required to perform well in university.

It may be interesting to study why those repeaters have failed to obtain a good grade. It is clearly noted that the repeaters are poor in English. Most probably, right from the early stages of the degree course, students with poor English proficiency might have faced difficulties in coping up with subject matter and being sidelined in the competition. Further, research is needed to confirm this hypothesis.

Table 9: Component matrix

Variables	Component						
	1	2	3	4	5	6	7
ISB	<b>.152</b>	.245	.579	9.3E-02	-4.9E-02	-.517	.281
Library usage	<b>.779</b>	-.108	6.7E-02	-7.7E-02	-4.6E-02	-.174	.220
No. of books	<b>.610</b>	-.142	.294	6.1E-02	-.120	-3.4E-02	-.223
Library visits (Semester)	<b>.730</b>	-.243	8.8E-02	-.213	.106	.236	.108
Library visits (Examination period)	<b>.561</b>	-.243	.255	.409	-3.5E-02	8.7E-02	.149
Computer Usage	<b>.524</b>	-3.4E-02	.175	7.4E-02	.510	-.188	-2.1E-02
Class Attendance	<b>.728</b>	-8.4E-02	-4.8E-02	-.174	8.2E-02	4.6E-03	-.163
Revisits of lecture	<b>.546</b>	-5.5E-02	-.318	-.302	-.295	4.2E-02	9.4E-02
Use of Short Notes	<b>.569</b>	-9.6E-02	.332	-.158	-.339	.306	1.2E-03
O/L English	<b>.528</b>	.407	-.238	.247	-.214	-.230	.107
Level examination	<b>.592</b>	3.9E-02	.277	.190	.314	.161	-.551
GEA	<b>.546</b>	.466	-7.2E-02	5.5E-02	-.361	7.0E-02	-.325
Family income	<b>.352</b>	.128	-.341	.423	.429	.360	8.3E-02
Family education	<b>.579</b>	.280	-.545	.240	5.2E-02	8.5E-02	.213
Family support for education	<b>.217</b>	.577	-.263	-9.8E-02	6.2E-02	-.186	2.1E-02
Sports	-.309	.521	.320	-.291	-.108	.331	5.6E-03
Extra Curriculum Activities	-9.950E-02	<b>.686</b>	.214	-.257	.137	.248	6.8E-02
Time management	<b>.705</b>	-.147	-.258	-.368	-3.5E-02	3.6E-02	-5.9E-03

#### 4. Conclusion and recommendation

It was concluded that library and computer usage, lecture attendance, regular revisiting of notes, short note preparation, English proficiency, family education back ground and time management skills have significant positive correlation with the performance of the B Sc undergraduate students. Gender, academic merits of university entrance, sources of information, peer helping classes, family income and extra curricular engagements have no effects on performance. Further, studies are needed to determine whether poor English proficiency has made some students to be side lined themselves from the race of getting good grades in examinations.

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# Sustainable Quality Education for Children with Disabilities in Pakistan

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## Abstract

*Special education in Pakistan is frequently criticized for its low quality both in term of curriculum content and delivery in the classroom. This sub-standard education, which has sustained for decades, is justified on the basis of low profiles of the students with disabilities. It is, however, argued that these profiles are constructed and supported by the unrealistic beliefs of special education teacher, parents and the society at large. Inclusive education emerged as a remedy to this malaise and has become now a standard procedure to achieve sustainable quality education for children with special needs round the globe. A movement for inclusive education was initiated in Pakistan with the dawn of 21<sup>st</sup> century. Now after a decade two major attitudinal barriers have surfaced. The stakeholders of ordinary education argue that the inclusive education will further deteriorate the already falling standards of public education. They fail to see inclusive education as a school improvement strategy. On the other hand, special educators and administrators fear that inclusive education will lead us nowhere and educational opportunities already available of whatever quality will diminish. They themselves are uncertain and scared about their future and the future of the education of special needs children. It is high time that educational leaders and thinkers should respond to this challenge in order to secure the future of these children. This paper will share some of the solutions that may bring a hope for the parents, educators and policymakers.*

**Keywords:** Sustainable quality education, children with disabilities, inclusive education, UNCRPD, Pakistan.

## Background

Recently education has become the sole responsibility of provincial governments in Pakistan. Under provincial Department of School Education, there are multiple parallel systems to cater for the educational needs of children such as English medium schools, religious schools, vocational schools, girls schools, etc. The children with disabilities are enrolled in special schools and centers run by both public and private sectors. Department of Special Education, Government of the Punjab is responsible for quality special education. Special schools are located in urban areas and hence are only accessible to 4% of total school age

population of children with disabilities (Hameed, 2005). Compared to this 68% of their school age peers without disabilities are enrolled in ordinary schools (Govt. of Pakistan, 2006). This huge disparity in access to education is a gigantic challenge for the state. Pakistan, by signing various conventions, declarations and agreements, is obliged to address this issue on priority basis.

Besides a wide gap in access to education the quality of special education at all levels is extremely low. The special schools and centers are hardly engaged in any teaching or learning process. Instead, they largely function as daycare centers where special needs children are seen as very low profiled learners. The administrators, teachers and caregivers all believe that these children are not fully educable as compared to their normal peers and even if some of them are relatively better learners their education will not change the quality of their life.

With the dawn of 21<sup>st</sup> century the capital, Islamabad, saw a move towards inclusive education largely driven by UN agencies such as UNESCO and UNICEF or INGOs such as Sightsavers, IDP Braillo Norway, LCD, Save the Children, CBM and ICEVI. The focus of this movement was two folds; first, to spread awareness about inclusive education in masses and second, to do advocacy for integrating special needs children with mainstream education through inclusive approach. The Departments of Special Education at Universities of Punjab, Karachi and at Alama Iqbal Open University, Islamabad played a key role in indigenizing these efforts. They promptly adapted their Ph.D., M. Phil and M. A. programs to meet the emerging needs of a paradigm shift. The Federal Ministry of Social Welfare and Special Education through Directorate General of Special Education provided unconditional governmental support for this movement. The Federal Directorate of Education in the Ministry of Education saw this movement another extension of their Child Friendly School program and became an active partner in the movement.

The next seven years witnessed a series of seminars, workshops, conferences and consultation meetings that took place mainly at Islamabad to create awareness among stakeholders and to take the Federal Ministry of Education on board. As a result of these efforts the ice started melting down. For the first time in the history of education in Pakistan the National Educational Policy 2009 mentioned inclusive education as a solution to education malaise particularly in terms of its access to marginalize communities. The National Policy 2009 reads:

The educational system in Pakistan is accused of strengthening the existing inequitable social structure as very few people from the public sector educational institutions could move up the ladder of social mobility. If immediate attention is not paid to reduce the social exclusion and moving towards inclusive development in Pakistan, the country can face unprecedented social upheavals.(p.12)

To achieve the commitments of Government of Pakistan towards Education for All (EFA) and the MDGs, inclusive and child-friendly education shall be promoted (p.19)

When the stage was set to move forward, the Parliament amended the Constitution and education portfolio was devolved to provincial governments. Although this was a long awaited decision and was seen as a blessing for the country yet it seriously upset the groundwork already laid down for inclusive education movement. At present there is some reverberation effect in Punjab but other four provinces will have to take a fresh start.

The Department of Special Education Government of the Punjab (DSEP) under a new leadership in collaboration with DEFID, UK has taken a number of initiatives for the inclusion of children with special needs in mainstream schools. The DSEP initiated a successful dialogue on inclusive education among the stakeholder by holding a three-day seminar and broad-based conference to highlight the issues. The recommendations of this conference were presented to the Government of the Punjab for further actions. Another round of review and reflection was organized in which top leadership of organizations of the persons with disabilities working for persons with disabilities participated. As a result, a Provincial Steering Committee under the chairmanship of Senior Minister was constituted in which all line departments are included. The DSEP is involved in a massive assessment of the students enrolled in their special schools and centers throughout the Punjab province in order to reconsider their placement. The teacher of both the ordinary and special schools are undergoing refresher courses to take up the new task.

In spite of all these efforts that were put in to prepare teachers and parents for implementation of inclusive education, two attitudinal barriers have emerged that seemingly resist any immediate breakthrough. On one side, the teachers of ordinary schools are reluctant to accept inclusive education because of two reasons. First, they feel that they are not fully competent and supported for this major shift and it will be difficult to create a welcoming environment for children with special needs even if they are really willing to do it. Second, the public school is already under furious criticism for its extremely low educational standards. The inclusion of special children will further deteriorate the quality of instruction and school may collapse. Then it will not be able to serve any of these groups of children. The children with special needs may face alienation, displacement and neglect if they are forced to be a part of public school. These views are widely shared among policy makers, administrators and teachers. This mindset has emerged as insurmountable barrier to implementation of inclusive education in Pakistan.

On the other side, special education teachers resist inclusive education with a different rationale. They argue that special needs children require a type of “clinical care” that will never be possible in a care-free environment of public school. Moreover, the students of public school will not accept them and they may bully, hate and show aggressive behavior against children with special needs. Instead of rejecting the idea of inclusive education in total they tend to partially favor the inclusion of children with mild disabilities in spite of the fact that such children are not in special center and schools. Majority of children with mild disabilities are enrolled in ordinary public schools without any additional support to create an enabling environment. The argument of inclusion of children with mild disabilities, therefore, bears no meanings. It may be pointed out here that Special Education Department, Govt. of the Punjab is the only organized and meaningful force behind the movement for inclusive education in Punjab at present. But even this support is not well grounded in the thought and action of those who are engaged at operational level. Deep in their minds they see inclusive education as a threat to their jobs and future prospectus. In case inclusive education is successfully implemented in Punjab they will out of the jobs, they believe.

A review of recent regional literature on inclusive education indicates similar challenges being faced in other countries of the South Asia. Sing (n. d.) identifies five barriers to inclusive education in India. They include attitudinal barrier, physical barriers, inappropriate curriculum as a barrier, untrained teachers as barrier and organization of system as a barrier. Explaining the fifth barrier i.e. untrained teachers he notes, “At present, training to teachers is fragmented, uncoordinated and inadequate taking place in a segregated manner i.e. one for special children

and another for students with general disabilities; both of them are preparing teachers for the segregated schools.” (p. 7). The exclusive training of teachers promotes a culture of exclusion. With the passage of time it has appeared as a natural phenomenon. Everybody engaged in educational process takes it “for granted” and segregated education has become a norm.

Guilford\_Lindsay (2006) commenting on implementation of inclusive education (IE) in India remarks on the quality of teacher education, “However, the apparently slight regard for content and methodology of the courses, which do not re-conceptualize IE or address attitudes towards disability, demonstrates the need for further change in this context.” (p. 28). The course content of teacher education programs needs re-conceptualization of sociological foundations of education. There is need to reorganize the content on the basis of current literature on human diversity and the factors that result in social exclusion. Hwang and Evans (2011) surveyed the attitudes of teachers of ordinary schools and concluded that a large majority of teachers lacked training to implement inclusive education successfully. Although they believed that insufficient support and resources are the main reason for this failure. (p. 9). The perceptions about their capacity to implement inclusive education ultimately are transformed into unwillingness and then into a barrier.

Ahsan & Burnip (2007) conducted a qualitative study to document the views of teachers in regular schools and their heads. The study was very illuminating because the actual responses were reported with a reflection from the authors. They concluded that medical model of disability was the popular paradigm to respond to the inclusion of special needs in the regular classroom. They report:

It was noteworthy that some institutional heads themselves believed in the traditional approaches of teaching-learning. Their statements in the course of the interviews revealed that several issues influenced such beliefs. Expressions used by the respondents such as ‘problems of disability’, ‘less IQ’, ‘normal child and special child’ and so on clearly indicated their beliefs supporting the medical model of disability. (p. 20)

The medical model sees disability as abnormality. It requires clinical setting for its correction. Disability is rarely discussed in the mainstream teacher education curricula. Human diversity as it is emphasized today has never a part of the teacher education in the region. A mindset that considers disability excluded from normal humans is cognitively alien to the philosophy of inclusion.

In the presence of these attitudinal barriers Pakistan has failed to exploit the resources available in the country and in the form of foreign aid for achieving MDGs particularly the goal “Education for ALL”. There is need to critically review the present situation in order to propose indigenous solutions that are not only acceptable for the stakeholders and but are also financially viable. At present the journey to inclusive education is stuck at the crossroad. It appears that there is no way out. In the absence of a strong political will the role of professional leadership becomes even more crucial. This paper is a humble effort in this regard.

## **Basic issues**

Before moving further it seems desirable to identify the fundamental issues that confront educators engaged in implementation of inclusive education. Following three issues need immediate attention of the professionals:

1. What is acceptable definition of inclusive education in Pakistan, which is universally defensible as well?
2. What could be a roadmap for smooth implementation of inclusive education?  
A roadmap that could surpass the attitudinal barriers.
3. How can the present administrative set-up be best utilized for this purpose?

## **1. Finding Acceptable Definition of Inclusive Education in Pakistan**

As far as the first issue is concerned, the definition of inclusive education has been evolving with the passage of time in Pakistan. The UNICEF study on “Examples of Inclusive Education in Pakistan” was the first effort to find a working definition of the concept. In the key findings of this study, it was reported that:

Some private institutions have become interested in inclusive education. They have started including special needs children in their schools but have not paid adequate attention to disability-friendly infrastructure development, professional training of teaching staff, use of appropriate teaching–learning methods, etc. (p. 35)

While defending the selection of examples of inclusive education in Pakistan the author of the study developed a three-point criteria for the selection. The development of such criteria can be seen as an effort to propose a working definition of inclusive education. It was not only used to sort out the best practices from others but also made acceptable to the international donor i.e. UNICEF. This certainly requires a comprehensive understanding of what is being practiced and what is acceptable on a continuum of international definition of the construct. This is what the author came with:

These ‘nearly’ good practices were selected as examples of inclusive schools that show that [1] All children, including those with disabilities, can be accommodated in ordinary schools. [2]The school policy of these institutions is to include children with disabilities. [3]They have created a welcoming and accessible environment for children with special needs. (p. 4)

It appears, though, that these criteria do not exactly match with the definition already put forward in the Salamanca Statement in 1994. The Salamanca Statement perhaps is the most cited document in the world history of inclusive education. It not only comprehensively defines the new approach but also delineates the minor details of any action plan to implement it. It is amazing that the professionals have hardly made any valuable intellectual addition to the ideas of the authors of the Salamanca Statement. Here is what they conceived almost 18 years ago:

The fundamental principle of inclusive school is that all children should learn together, wherever possible, regardless of any difficulties or differences they may have. Inclusive schools must recognize and respond to the diverse needs of their students, accommodating both different styles and rates of learning and ensuring quality education to all through appropriate curricula, organizational arrangements, teaching strategies, resource use and partnership with their communities. There should be the continuum of support and services to match the continuum of special needs encountered in every school. (pp 10-11)

The major difference is in the school orientation. It should include and welcome all children with special needs instead of giving access to only children with mild disabilities. In 2002 inclusive schools documented in the study were inclusive to the extent that they had opened their doors for children with select disabilities while still refusing to others. They failed to see the continuum of special needs of the children and hence could not create a continuum of appropriate services to meet them. The other major gap was the insensitivity of public school in responding to special needs. None of the public school was documented as an example of inclusive school in the study. However, according to Miles (1985) several thousands of children were already enrolled in public school without any professional support.

Now after about a decade the definitional debate appears to have a resolution. There seems an agreement that ordinary school should be open to all children including special needs except those with severe to profound disabilities. With such agreement the nation is still far away from the philosophy of inclusive education, which clearly stands for the elimination of such discrimination. A critical analysis of this new definition reveals that by excluding the severe and profound disabilities from the definition of inclusion the decision makers in fact deny the right of education of all children. It is a violation of the UNCRPD, which clearly forbids the exclusion of children with even severe disabilities from mainstream education. The article 24.2 (a) of UNCRPD reads as:

Persons with disabilities are not excluded from the general education system on the basis of disability, and that children with disabilities are not excluded from free and compulsory primary education, or from secondary education, on the basis of disability.

Pakistan has recently ratified this convention. In order to fulfill the obligation of ratification the state must respond to educational needs of all children under one roof. There is need to realize that the definition of inclusive education will have to be inclusive to the extent that it must ensure “no child is left behind”.

## **2. The Roadmap for the Implementation of Inclusive Education**

As far as the roadmap of inclusive education is concerned one has to realize the volume of the task ahead and the resources available at the disposal of the decision makers. There are multiple estimates about the prevalence of disabilities. Keeping in views those estimates that range from 2.5% to 14% (Govt. of Pakistan, 1998; Durkin, 2001), the prevalence of disabilities in Punjab province, for example, should not be less than five million. The school age population is about 200,000. The present enrolment in special schools and centers is about 40,000. In order to include the rest about 160,000 children with disabilities about 75000 public schools need improvement in their physical facilities, human resources and in curriculum and instruction. It becomes a gigantic undertaking that is probably beyond the financial limits of both education and special education departments.

Hameed (2005) proposes a roadmap after presenting an in-depth analysis of the existingsituation. The implementation plan was phased out as under:

- Phase I:** Remote rural primary schools with high incidence of disabilities
- Phase II:** Rural primary schools with low incidence of disabilities
- Phase III:** All rural primary schools and middle schools
- Phase IV:** All primary schools and rural high schools
- Phase V:** All high schools and rural colleges
- Phase VI:** All colleges and Universities



The roadmap was developed based on certain hard facts. For example, the remote rural primary school stands alone as a service provider for education. The prevalence of children with disabilities is normally less than 10 in the village it serves. Naturally no special center or school can be justified with such a low enrolment. No alternative arrangement is possible for the education of children with disabilities in the area except improving this stand-alone primary school. It can easily accommodate few children who have unfortunately lost all their hopes for education. One of my Ph.D. students in special education told a very sad and spine-tingling story of his younger sister, a young girl with deafness who struggled for years and finally committed suicide when her family refused to move to big city for her education.

The number of such remote schools may be no more than 15000 in the whole province. An economical tool kit for the improvement of these schools can be prepared in collaboration with the Department of School Education and Department of Special Education, Punjab under a Rural Inclusive Education Program (RIEP). The international donors are always willing to provide financial as well as technical support for such initiatives. Hameed (2005) also proposed a package for the successful implementation of the initiative. This package included:

- Teachers' training on special/inclusive education
- Teacher guide to provide sustainable professional support to teachers
- Teaching kit and assistive devices
- Flexibility in curriculum and evaluation
- Provision of itinerant special education teacher at *Markaz* level. [*Markaz is a smaller unit of a Sub-division*]

The Rural Inclusive Education Program (RIEP) can further be phased out for the ease of implementation. Every village in Punjab is a perfect example of a “community of practice” (Lave & Wenger, 1991). The “community of practice” is a group of people who share a craft and is capable to sustain and solve its problems without seeking foreign aid. The policy as well as attitudinal barriers is at minimum level. There is no discrimination and segregation in the social environment. If sufficient government support is made available at least 40,000 students with disabilities can be included in rural primary schools within 6 months. Following will be immediate benefits of RIEP:

1. The attitudinal barriers can be overcome easily with the community participation.
2. A reasonable chunk of out of school children will be able to enroll in schools adding to net participation and enrollment rates.
3. The inclusive education will take its successful takeoff not so far achieved in various pilot programs of inclusive education.
4. The RIEP will create general awareness among masses through word of mouth. This awareness may remove attitudinal barriers discussed above.
5. A strong political support will be created to move ahead and implement the remaining phases of inclusive education.
6. It will build up the confidence level of international donors to allocate more funds into inclusive education projects.

By taking the following steps the rural primary schools with high incidence of disability can be identified:

1. The parents can be invited to register their children with disabilities with the Department of Special Education Govt. of the Punjab through advertisement in print and electronic media.
2. The parents can register their children by using SMS, e-mail or phone call.
3. The areas with high density of disability can be identified by analyzing the registration data.
4. The primary schools located in these areas can be selected for RIEP.  
In addition to that the EDO (Education) can be asked to identify these schools in the district with the help of their staff.

### **3. Redefining the Roles: School of Education and Departments of Special Education**

The third major issue is about re-defining the roles of Department of School Education and Department of Special Education for the effective implementation of inclusive education. A well-distributed network of special schools and centers exists in the province. After careful mapping the *Tehsil* (sub-division) clusters can be created around the special education center/school located at all *Tehsil* headquarters. The roles of both Departments can be defined as suggested in table 1.

Coordination committees at provincial, district and *Tehsil* levels may be constituted for meaningful collaboration between Department of School Education and Special Education under the chairmanship of Secretary Education, Executive District Officer (EDO) Education and Assistant Executive Officer (AEO) Education respectively. The task at provincial level may be trusted to the following steering committee:

1. Director Public Instruction (Elementary)
2. Director General DSD, Lahore
3. Director Special Education Punjab
4. Subject Expert in Inclusive/ Special Education

The provincial steering committee may have quarterly meetings to review the progress of the project and address the problems faced at district and *Tehsil* levels. The steering committee may plan regular visit to monitor and meet with staff and parents for their feedback. This collaboration will not bear any fruit unless the attitudes of both parties are positive. The change in attitude requires a change in thought and a strong link to the factors that determine meanings in a given context. Keeping in the socio-political realities of the country it may be useful to work for acquiring a strong political will.

Table 1: The distribution of roles of School Education and Departments of Special Education

<b>Sr. No.</b>	<b>Activity</b>	<b>School Education</b>	<b>Special Education</b>
1.	Identification and registration of CWDs	AEO Education will collaborate	Sole responsibility
2.	Assessment and placement	AEO Education will collaborate	Sole responsibility
3.	Allocation of school	Sole responsibility	DO Sp. Education will collaborate
4.	Training of teachers	EDO Education will collaborate	Sole responsibility
5.	Structural changes	Sole responsibility	DO Sp. Education will collaborate
6.	Provision of Assistive technology	EDO Education will collaborate	Sole responsibility
7.	Adaptation of curriculum and instruction	AEO Education will collaborate	Sole responsibility
8.	IEP preparation	AEO Education will collaborate	Sole responsibility
9.	IEP implementation	Sole responsibility	DO Sp. Education will collaborate
10.	Sustained support to teachers	AEO education will collaborate	Sole responsibility
11.	Monitoring	Sole responsibility evaluation	AO special education will collaborate

It would be misleading to assume inclusive education movement as a nonpolitical action. On the contrary it has always been a political doing as it not only intervene social structure but also tries to restructure the dominant coalitions even at grassroots level. The prime beneficiary of any inclusive movement is always the sitting government. It seems, therefore, reasonable to engage the political leadership at all levels in this major socio-political change.

The special education center/ school at *Tehsil* headquarter will serve as a hub for the implementation of inclusive education in that particular *Tehsil*. The idea of a hub needs further clarification. The roles of hub school/ center include, but not limited to, the following services:

1. Serve as resource centre for data on disability in the *Tehsil* and literature on inclusive education.
2. Serve as the production and distribution center for instructional material on inclusive education.

3. Serve as training center for continuous capacity building of the teachers involved in inclusive education.
4. Serve as a community center for regularly holding meetings of the stakeholders.
5. Serve as the research center for conducting studies on the current status of the implementation of inclusive education.

The success of inclusive education will entirely depend on the performance of the hub. The hub should be vibrant and resourceful in terms of its leadership to generate human as well as material resource to timely meet the needs inclusive education in the entire Tehsil. The selection of the leader of the hub will determine the fate of the project.

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# **Critical Factors Affecting the Managerial Performances of the Principals of Public Schools in the District of Galle, Sri Lanka**

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## ***Abstract***

*The purpose of this survey research was to determine the level of a principals' performance in school management among peers, as well as institutions, based on the principal's own perceptions. Furthermore, this research examined the aspects of school management which caused major problems or concerns, and specific factors affecting their managerial role. The sample was 202 principals of public schools in the district of Galle, Sri Lanka. Data were collected by self-administrative questionnaires. Statistical analysis used was a t-test and a one-way analysis of variance (ANOVA). The results revealed that only two facets of school management; budget and general affairs were related to a level of high performance. Two other facets of management; academic affairs and personnel were associated with moderate performance. In examining the individual factors, only one factor, gender, had a significant effect on a principals' performance. In evaluating the institutional factors, none of them had an important effect on principals' performance. These findings suggested that the professional development of principals should be promoted by developing a foundation for performance based compensation.*

**Keywords:** School Principals, Managerial Performance, Critical Factors, Facets of Management

## **Introduction**

School which is the key institution of the education sector and it plays an increasingly central role in education reform programmes and there is a long history of public investments in education of Sri Lanka, aimed chiefly at providing universal access to primary and secondary education (Aturupane, 2004); because school should be accountable to the public and this is associated with better school performance. But in this respect, Sri Lankan schools show high variance and performance while some do not. Some schools claim a high demand from parents but some do not. It has led to the decline and closure of some rural schools as parents are lured to send their children to more popular urban schools. During last few decades, this trend has escalated resulting in the growth of mega schools and this has been described as the bipolarization of the school system (ADB, 2007). As a result, the school system of Sri Lanka is getting unbalanced and causing more issues in the context.

With regard to school effectiveness and school improvement perspective, it is worth examining particular roles. School principals play a vital role in setting the direction for successful schools, as well as the principals' role as an educational leader also has been

strongly emphasized. The principal has often been cited as a key figure in blocking or promoting change, and as such, it represents a fertile ground for considering the concept of implementation in action (Fullan, 1992). The quality of leadership makes the difference between the success and failure of a school (Musungu and Nasongo, 2008). They further explain that research and inspection clarify the extent to which the quality of leadership is crucial to improvement. In view of the effective schools, it seems to be headed by principals who have a clear vision of where they are going, who are knowledgeable enough about teaching to help teachers and students work towards desired targets, and who are able to protect schools from the kinds of demands that make it difficult for schools to operate on a professional basis (Chubb & Moe, 1990). Nanayakkara (1997) confirms that if there is a single factor which contributes most to the progress of a school, it is not the resources, good teachers and pupils, and supportive community, but it is the principal, one who courageously displays good leadership qualities. As research on school effectiveness has focused attention on the central role of the principal, efforts to hold principals accountable for specific performance and outcome targets have increased. Despite these efforts, little discussion can be found of the conceptual foundations upon which these targets are based. Therefore, the role of the principal has been emphasized in school improvement. In consideration with another aspect of this research, evaluation serves three different purposes; (a) to comply with administrative demands; (b) to fulfill accountability purposes; and (c) to lead to pedagogical and managerial improvement (De Grauwe and Naidoo, 2004).

Considering the large amount of public money spent on education in schools, it must be effective and should deliver better service to the country. Therefore, it is essential that an analysis is carried out to evaluate the merits and demerits of schools as well as principals. The researcher, as an education officer in the field of planning should rethink on this matter, critically analyze the principals' performances and identify those critical factors that affect which are concerned with the delivery of quality service to the community.

## **Performance**

In the field of education, performance has a broader meaning, so any research conducted by the relevant field, should clearly define that what the performance was. According to Alexander, Anderson & Gallegoes (2004), "performance" like the very nature of "education" was a contested term. Gallie (1964) offered his notion of contested terms, "the recognition of a given concept as essentially contested implies recognition of rival uses of it (such as oneself repudiates) as not only logically possible and humanly 'likely', but as of permanent potential critical value to one's own use or interpretation of the concept in question". Therefore, to define the term "performance" was a very difficult task. Any education system is based upon the educational performance. But often it has focused on learners' or students' performance as academic performance. It refers to how students deal with their studies and how they cope up with or accomplish different tasks given to them by their teachers. But the survey has focused on the principals' performance. The principal has done a profession or job at school. Therefore, performance should focus on his/her job performance. It most commonly refer to whether a person performs their job well. Job performance has meant Individual output in terms of quantity and quality expected from each employee in a particular task. In other words, performance has meant expectations of the specific task at hand which have been previously assigned to the person. Despite the confusion over how it should be exactly defined, performance was an extremely important criterion that has related to organizational outcomes and success. The most commonly accepted theories of job performance have come from the work of Campbell and colleagues (Campbell et al.. 1993). Coming from a psychological perspective, Campbell

describes job performance as an individual level variable and something a single person accomplishes. This differentiates it from more encompassing constructs such as organizational performance or national performance which are higher level variables (Campbell et al., 1993). This has defined performance as a behavior or action relevant to the attainment of an organization's goals that could be scaled and measured. Moreover, job performance was defined as what one was paid to do, or what one should be paid to do. The theory states that the measurement options, could be rated by a supervisor, peer, or self, a simulated work sample, or hard criteria besides being valid reliable, and not deficient free of contamination from sources of variation that were not under the control of individual situational enhancers or constraints, if not taken into account in an appraisal which can contaminate the mean, variance, or both with regard to an individual's performance. This theory has provided a framework for any researcher who wants to study performance and any practitioner who wants to improve it. Deadrick and Gardner (2000) have defined Employee performance as the achieved work outcomes for each job function during a specified period. The principal is the key person of school administration because in some occasions, the entire school performance is recognized through the principal's performance. But the present study has focused on managerial performance of the principal, therefore managerial facets of school principals should be identified in this.

### **Facets of management**

The performance of school principals can be subdivided into four areas of management tasks as; a) academic affairs, b) budget, c) personnel and d) general affairs. Principal is held accountable for the provision of the means of achieving curriculum objectives. As the manager of the school, he is expected to provide teaching material and necessary equipment as well as to manage the limited available resources for the utmost benefit of the students. He is expected to provide strong leadership in curriculum implementation (Ehiametalor, 1985). Finance is one of the resources directly required by the school system to reach its goals as he is involved in to some extent in the management of financial resources provided to the school for petty cash, non-durable item purchases, and contracts involving the parent-teacher association (Ehiametalor, 1985). The leadership of the Principal is equally vital in the area of staff personnel administration. The Principal plays some essential roles in coordinating the various activities of staff members. The school headship position burdens the occupier with the responsibility for providing staff orientation, in-service training, and community leadership. The relationship between the school and immediate community is of critical importance to successful school administration (Ehiametalor, 1985). Principal can cultivate an effective staff by modeling effective behavior and make a shift from traditional leadership styles to more contemporary approaches designed to enhance teacher professionalism. The central roles played by the school principals in enhancing teacher professionalism and the key leadership models have emerged as important as a result of performing these roles (Rizvi, 2008). The evaluation of teacher effectiveness is an important administrative function of principal. Just as the effectiveness of the teacher is crucial to the achievement of system goals so is the performance of the principal in task management. (Ehiametalor, 1985)

### **Critical factors affecting Managerial Performances**

The principal plays a dual role of meeting individual needs for growth and organizational needs for goal achievement. With reference to the research literature, two kinds of factors can be identified which could affect the principals' performance. They are individual and institutional factors. When considering the individual factors, previous studies have shown that age, gender, marital status, academic qualification and years of experiences of principals could affect their performances.



Many studies have shown that the age of the principal plays a significant role in determining their performance. Ehiamentor (1985) has concluded that the performance of principals in age group (40 – 49) is substantially higher than the performance of those in age groups (30 – 39) and 50 and above. One interpretation could be that those within the (30 – 39) age group have just assumed the role of the Principal and probably are still learning to adapt to administrative procedures. Many studies have shown that gender is also important predictor of principals' performance. Eagly, Karau & Johnson (1992) argue that there is a significant difference between performance of male and female principals. Considering the different aspects of leadership styles, the tendency to lead democratically or autocratically, produced the largest sex difference, with female principals adopting a more democratic or participatory styles and a less autocratic or directive style than male principals. They conclude that generally, female principals scored somewhat higher than male principals on measures of task-oriented style. Chang, Dharmawardena & Teas (1988) have concluded that there are small but statistically significant differences across the gender of the principals on management orientations and the female principals are slightly higher on the executive function and slightly lower on the curriculum management. Many studies have suggested that marital status of a person, especially for women may affect their job. Oplatka (2001) states, women are culturally expected to be caring, subjective, and personal. In addition, these societal beliefs are reproduced as barriers to career development and they also help to preserve these barriers. According to Çelikten (2004), women who accept the traditional roles of motherhood and becoming a good spouse regard their role in the public field as having secondary importance.

Human capital theory suggests that the ability and knowledge acquired by individuals are likely to be rewarded with higher earnings in the labor market. Academic qualification and work experience are the two forms of human capital individuals which are most likely to be acquired during their careers (Ng and Feldman, 2009). Many studies on job performance show that the Academic qualification of the principal has an impact on his/her job performances. Academic qualification refers to the academic credentials or a degree an individual has obtained (Ng and Feldman, 2009). As an example, Rugai and Agih (2008) have found a significant relationship between the educational qualification and job performance. Years of experience are interesting as one looks at the level of principals' performance between newer principals and more experienced principals. Ehiamentor (1985) confirmed the importance of years of experience because competency in school management generally is acquired through on-the-job experience rather than through formal training. As an example, Lekamge (2010) states that the principals who have experienced success in performing their transitional leadership roles were more experienced than others. Also, Clark, et al (2009) confirms that there is a positive relationship between principal experience and school performance.

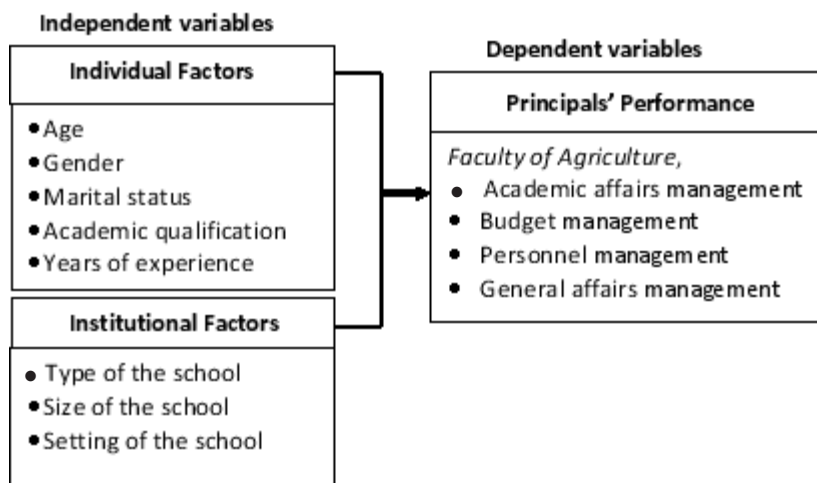
In this research study, three institutional factors are considered. They are types, size of the schools and setting of the schools. In Sri Lankan context, there are four types of schools as indicated below depending on the terminal grade and the streams offered at General Certificate of Education (G.C.E) Advanced Level (ALs) (Grades 12 and 13) of the school; Type 1AB, Type 1C, Type 2 and Type 3. Chang, Dharmawardena & Teas (1988) have mentioned that the principals of different types of schools were perceived differently in terms of initiating structure and consideration with the type 1 school principals who consistently scored higher on management orientations. They were perceived by their subordinate as being more considerate and more active in initiation of structure for the work at schools.

School size here refers to how large and small the school is based on the total number of students being currently studying in the school. Stemple (2004) says that with an increase

in school size come more extra and co-curricular activities, thus more supervisory responsibilities, and more activities to monitor. The studies show that when the number of students in a school is manageable, the teacher can pay more attention to the children and can provide help as per the needs of the students. Hence, the research has endorsed small schools as educationally effective, often adding the parenthetical remark that smaller size is especially beneficial for impoverished students. The issues of the principals of small schools in Sri Lankan context have been discussed by Perera (2004), has mentioned that the country has a dominant rural sector and there are over 2,600 schools with less than 100 students. Being the head of a small school is clearly a different matter from being a head of a school with well over 1,000 students, where both human expertise and physical resources were readily available. Howley (1994), focused on influences related to achievement and attainment (E.g., school dropout rates), and noted evidence that smaller size seemed to improve the performance of schools serving impoverished communities.

School setting is defined as the physical location of schools in either Municipal or urban council area or regional council (Pradesheya sabha) area. Chang, Dharmawardena & Teas (1988) confirms that the locations of schools have presented marginal differences in the management orientations.

According to the concept definitions related studies from literature review, the study was conceptualized based on the variables that were used in the study.



**Figure 1: Conceptual framework**

With regard to the above conceptual framework, this study aims at analyzing the aspects of managerial role of Sri Lankan school principals to identify the gap between expected and actual performance of principals and to suggest proposals to strengthen the 'Post of school principal'. The Specific Objective of the study is to determine the overall levels of principals' performance of public schools in the district of Galle, Sri Lanka and in order to ascertain or not whether the individual and institutional factors affect their performance.

## Methodology

This research has been carried out by using descriptive survey design, under quantitative research paradigm, and data were collected in order to answer questions about the current status of the subject or topic of study.

## Population and Sample

The study focused on the 424 public schools in Galle District with a population of 424 Principals, and covered education zones and types of schools as follows:

Table 1. Population of the study

Education Zone	School Type				Total
	1 AB	1C	Type 2	Type 3	
Galle	23	37	65	22	147
Ambalangoda	10	16	39	17	82
Elpitiya	7	26	59	28	120
Udugama	4	15	33	23	75
<b>Total</b>	<b>44</b>	<b>94</b>	<b>196</b>	<b>90</b>	<b>424</b>

The formula for estimating the sample size and a table for determining the sample size based on confidence level required from a given population was provided by Krejcie & Morgan (1970).

$$S = \frac{K^2 NP(1-P)}{d^2 (N-1) + K^2 P(1-P)}$$

Where,

S = required sample size;

N = the given population size;

P = population proportion that for table construction has been assumed to be .50, as this magnitude yields the maximum possible sample size required;

d = the degree of accuracy as reflected by the amount of error that can be tolerated in the fluctuation of a sample proportion p about the population proportion P - the value for d being .05 in the calculations for entries in the table, a quantity equal to  $\pm 1.960_{\sigma}$ .

$X^2$  = table value of chi square for one degree of freedom relative to the desired level of confidence, which was 3.841 for the .95 confidence level represented by entries in the table.

The stratified random sampling method was used to select the sample of 202 Principals of government schools covering a range by education zones and types and was determined by using proportional probability procedure on educational zonal wise as follows:

Table 2: Sample of the study

Education Zone	School Type				Total
	1 AB	1C	Type 2	Type 3	
Galle	11	18	31	10	70
Ambalangoda	5	8	19	8	40
Elpitiya	3	12	28	13	56
Udugama	2	7	16	11	36
<b>Total</b>	21	45	94	42	202

### Data collection

The tool used in this survey research was composed of self-administrative questionnaire and measuring model constructed from the study in document, concepts and related researches. As for the questionnaire about the performance, the researcher constructed it by reviewing the related researches and adjusting them for the appropriate and easy use in this study. The questions reflected the quality of the performance in general. The constructed questionnaire covered the performance in 4 facets; academic affairs, budget, personnel and general affairs management.

The questionnaire was divided into 3 sections. Section 1 of the questionnaire, general information has been designed to survey individual factors of the respondents including age, gender, marital status, academic qualification and years of experience. Responses to the questions are either multiple choices or blanks filling tasks. Section 2 of the questionnaire, school profile has been designed to explore institutional factors such as type, size and setting of the school. Section 3 of the questionnaire, the successes of school management has been the main part to measure the principals' performance. This section has 40 items and four aspects of principals' performance including Academic affairs management, Budget management, Personnel management and General affairs management. Each of the items has used a 5 – point Likert scale (Likert, 1932) that measures the degree of success of the performance. Scores on each of four aspect subscales, based on 10 items each, can range from 1 to 5; while scores for total performance, based on the sum of all 40 items, can range from 40 to 200. Each item is scored from 1 to 5. High scores on the scale represent high performance.

The level of performance was considered from the score of the answers and was classified into five levels according to the Best (1977) Criteria as follows: Lowest performance means the score was in between 1.00 – 1.80, Low performance means the score was in between 1.81 – 2.60,

Moderate performance means the score was in between 2.61 – 3.40, High performance means the score was in between 3.41 – 4.20, Highest performance means the score was in between 4.21 – 5.00.

The reliability has been checked by pre-testing the reviewed and improved questionnaire with the 40 school principals in the Galle district, who had qualification similar to that of the sample. The researcher has grouped the principals into four categories due to their school settings and school types. Then the researcher has based on the proportion of the education zones and school type to choose 40 persons for pilot test sample group. The reliability test value has been analyzed by using Cronbach’s Alpha Reliability Coefficients to search for the confident value (0.70). It is commonly used as a measure of the internal consistency reliability of a psychometric instrument (Cronbach, 1951). The reliability test value of the questionnaire was 0.9117.

### Statistical Analysis

All the data collected from respondents have been checked out, grouped and tabulated to facilitate the analysis process. The data have been electronically processed and analyzed by using computer application software. The researcher has used both the descriptive and inferential statistics while analyzing the data. Descriptive statistics has been used in presenting information received from the study in order to describe the Individual factors and Institutional factors of samples by using frequency, percentage, mean, and standard deviation and analysis statistics by using t-test and one-way ANOVA to study the factors that affect the performance of school principals in Galle District Sri Lanka. The significant differences were tested by post-hoc test with Least Significant Difference (L.S.D.).

### Results

#### Facets of Principals’ Performance

Table III indicated summary of the four performance facets. According to that, academic affairs management of the sample was at the moderate performance level, the budget management of the sample was at the high performance level, the personnel management of the sample was at the moderate performance level and the general affairs management of the sample was at high performance level. The total average was in high performed level.

Table 3. Summary of the Performance by four managerial facets

(n = 202)			
Four Facets of principals performance	Consideration		Level of performance
	Mean	S.D.	
1. Budget management	3.63	0.808	High
2. General affairs management	3.56	0.795	High
3. Personnel management	3.38	0.766	Moderate
4. Academic affairs management	3.31	0.674	Moderate
<b>Total Average</b>	<b>3.47</b>	<b>0.671</b>	<b>High</b>

## Comparison on the factor differences with their effects on the performances

This study was about factors that affect principals' performance of public schools in Galle district of Sri Lanka and was classified by the factors in terms of Individual factors and Institutional factors. Individual factors comprised of age, gender, marital status, academic qualification and years of experiences. Institutional factors comprised of type, size and setting of a school.

### Individual factors

Table 4 has illustrated the overall level of performance with regard to Individual factors. The findings indicated that the gender has a statistically significant difference. This means that it does have an impact on the performance. The performance level of male principals with a mean of 3.48 was higher than that of female principals (mean 3.46.)

The overall performance with regard to other Individual factors included age, marital status, Academic qualification and years of experience as a principal do not have a statistically significant difference. This means those Individual factors do not have an impact on the principals' performance.

Table 4 : Difference in Individual factors and Principals' Performance

		(n = 202)					
Individual factor		n	%	Mean	S.D.	T / F	p -value
Age	50 and Below 50	99	49.0	3.41	0.670	-1.311	0.920
	Above 50	103	51.0	3.53	0.669		
Gender	Male	150	74.3	3.48	0.627	0.126	0.039*
	Female	52	25.7	3.46	0.791		
Marital status	Single & others	20	9.9	3.49	0.605	0.086	0.629
	Married	182	90.1	3.47	0.680		
Academic qualification	Below bachelor's degree	104	51.5	3.44	0.693	0.772	0.464
	Bachelor's degree	41	20.3	3.42	0.639		
	Master's degree and above	57	28.2	3.567	0.657		
Years of experiences	Below 10	131	64.9	3.44	0.680	0.969	0.376
	10 & above	71	35.1	3.53	0.655		

\* Significant at 0.05 level (p<0.05)

### Institutional factors

Table 5 has illustrated the overall level of performance with regard to Institutional factors. The findings indicated that the overall performance with regard to the difference in type of a school, size of a school and setting of a school do not have a statistically significant difference. This means that the institutional factors do not have an impact on the principals' performance.

Table 5: Difference in Institutional factors and Principals' Performance

**(n = 202)**

Institutional factor		n	%	Mean	S.D.	T / F	p-value
Type of school	1AB	21	10.4	3.58	0.759	0.386	0.763
	1C	45	22.3	3.52	0.714		
	Type 2	94	46.5	3.45	0.619		
	Type 3	42	20.8	3.41	0.707		
Size of school	Below 200	107	53.0	3.37	0.682	2.274	0.081
	200 to 500	41	20.3	3.54	0.619		
	501 to 1,000	25	12.3	3.73	0.605		
	Over 1,000	29	14.4	3.53	0.711		
Setting of school	Municipal or Urban council	21	10.4	3.48	0.739	10.51	0.554
	Regional council (Prade-sheya Sabha)	181	89.6	3.47	0.665		

### Discussion of findings, Conclusions and Suggestions

The results of this study reveal that on a general note, there is a high level total average managerial performance of principals of public schools in the District of Galle, Sri Lanka. However, in this study, the managerial performances of principals were analyzed in relation to four different managerial facets. According to the results of the research, it can be understood that the performance of academic affairs management of the sample which was the first facet of the managerial performance of the principals' was at the moderate performance level. This result agrees with findings of a previous research of Philip, Patchanee & Jack (1994). The second facet of the performance of the principals' was budget management and the study has revealed that it was at the high performance level. According to the findings of other researchers (Ehiametalor, 1985 and Richardson, 2007), budget management has been introduced as a critical area of school principal's management arena. The third facet of the performance of the principals' was personnel management and the study has revealed that it was at the moderate performance level. This result agrees with findings of a previous research of Gieslmann (2009), the principals have taken a low degree of responsibility as pedagogical leaders, and that the principals have a low engagement in issues concerning teaching and learning of academic objectives and in staff professional development. The fourth facet of the performance of the principals' was general affairs management and the study revealed that the performance of it was high. This finding was different to the results of previous study by Mercer & Ri (2006). It has revealed that there was a large gap between expected levels and actual levels of performance in general affairs management of secondary schools principals in the People's Republic of China. Bush (1995) has emphasized importance of performance of general affairs management for educational leaders.

In examining the determinants of the individual factors, only one factor such as; gender has a significant effect on principal's performance of the district and the findings confirmed that there are no statistically significant difference on principals' performance by other individual factors, such as; age, marital status, academic qualification and years of experiences. In examining the determinants of the institutional factors, such as; type, size and setting of a school, the findings confirmed that there are no statistically significant differences on principal's performance in the district.

Even though the research findings showed that the overall performance of principals in public schools in Galle District of Sri Lanka was in a high performance level, there were some aspects like academic affairs management and Personnel management were in a moderate performance level which means that the principals in general were not successful in these aspects. Therefore, the following suggestions were expected to enhance the level of performance of principals in public schools in Galle District of Sri Lanka in future by policy decision making and educational planning.

Well performance of academic affairs and Personnel management directly affected the school system because well planned and effective strategies should be established while training programs should be provided in order to extend these facets of management. It should develop a foundation for performance based compensation systems for the principals and offer guidelines and financial incentives for the optional participants of the professional development programs. The research also revealed that there was a gender difference in principals' performance. Gender sensitivity should be recognized in policy making process and gender awareness should be established in guidance support service.

Principals should be continuously developed to improve their capacity to meet the managerial tasks to perform well. Therefore, trainings on current educational management issues should be given to the principals from time to time which should be arranged by zonal education administrators. According to that zonal level training system should be reestablished. The process should contain systematic training need analysis, setting particular training curriculum to address their specific needs, training plan, and follow-up activities.

The principals should be aware of what facets were low performed and what facets were high performed, because they should be given proper and adequate feedback through systematic performance appraisal system. This system should contain criteria which include the four facets of performance; academic affairs, budget, personnel and general affairs management and professional standards, professional agreement too. Performance appraisal system should be linked with a performance rewarding system.

Another important aspect is that there is no well planned professional guidance system to help principals of Sri Lanka. It is an essential requirement for better performance of school principals because of need attention to establish a professional guidance system to help them to identify the weak points of performance and to guide them to improve their performance.

There should be a measurement tool to assess school principals' performance and to improve school practice and decision-making through significant research resources related to key school policy matters. Therefore, school principals should be developed as reflective practitioners. They should be motivated to conduct action research to improve their performances and school level policy formation for effective performance. So, they should be provided with proper and specific training facilitating them to conduct action research.



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# Psychological Stress and its Relationship with Achievement of Science Students of Govt. Inter Colleges

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## Abstract

*This study attempts to assess the psychological stress and its relationship with achievement of senior secondary science students of Govt. Inter Colleges. A sample of students was randomly selected from different Govt. Inter Colleges of Meerut province. Psychological Stress Scale for Science Students developed by researcher which measures 12 dimensions of psychological stress was administered on students. Results show that the stress dimension "Examination and Achievement" has been emerged as the major factor causing stress, while workload in science as the least causing factor for stress. Negative and significant correlation was observed between achievement and total psychological stress and its dimensions infrastructure for science, peers, workload in science, vocational aspiration, health, communication problems and society, but not significantly correlated to its all other dimensions.*

## Introduction

Stress refers to a dynamic interaction between the individual and the environment. In this interaction, demands, limitations and opportunities related to work may be perceived as threatening to surpass the individual's resources and skills (Kohler et al. 2006). In case of disarrangement, this interaction may lead to cognitive, emotional and behavioural alterations. Some of the most common stressors are time pressures, workload, making decisions, continuous changes and economic mistakes at work. Senior secondary school years should be a new and interesting experience, but many demands and rapid changes can make them one of the most stressful times of the life. Students of this stage face increasing amounts of schoolwork, a rapidly changing curriculum, assignment deadlines and exams. They worry about selecting careers and post schooling programmes. They have to balance their schoolwork with their hobbies, sports and daily life. They have conflicts with friends, siblings, parents and have to adjust themselves with other environmental demands. Further, Science students have many obstacles to overcome in order to achieve optimal academic performance as compared to humanities students. Science students face not only academic stress but stress at work during their practical periods. A number of researches have been done looking at the correlation of many stress factors that science students experience and the effects of stress on their academic performance. Those studies carried out with medical students show that in the academic area, heavy work load, examinations and meeting deadlines for assignments were the most common causes of stress (Evans & Fitzgibbon, 1992; Kohn & Frazer, 1986). This is further supported by

Ratana Saipanish (2003) who conducted a study on 686 medical students in the Faculty of Medicine; Ramathibodi Hospital, Thailand. Obviously, test or exam anxiety is one of the main causes to academic stress and most university students seem to be more emotionally vulnerable due to examinations. Increased anxiety from tests has a debilitating effect on students' performance. When information generated by worrying about the test reduces the capacity available for performing the task, the result is that performance breaks down and the result becomes self-confirming (Fisher, 1994).

Most of the time, science students have complain of dwelling in between their efforts for better achievement and teacher's/ parent's expectations. Most of the studies in different responses to stress have been carried out in dental, medical, nursing, university and college students (Helmets, et al.1997, Sinha *et al.* 2000, Kurupparachchi *et al.* 2002, Mouret, G.M.L. 2002, Polychronopoulou, Argy and Divaris, Kimon 2005). Many scholars in the field of behavioural science have carried out extensive research on stress and its outcomes and concluded that the topic needed more attention (Ellison, 2004). The researcher has found out that there is not much research conducted in local universities particularly in Western U.P. in India, itself pertaining to this issue with regards to the students studying in Govt. Inter Colleges. Therefore, it is timely to conduct a research to examine this particular issue. In the present study, the researcher has attempted to study the psychological stress and its relationship with achievement of science students studying in Govt. Inter Colleges of Meerut province.

## **Objectives**

1. To study the psychological stress of science students of Govt. Inter Colleges.
2. To study the achievement of science students of Govt. Inter Colleges.
3. To study the contribution of psychological stress on achievement of science students of Govt. Inter Colleges.
4. To study the relationship between psychological stress and achievement of science students Govt. Inter Colleges.

## **Method**

Methods of research are generally determined by the theory of the topic under study, objectives of the study, resources of researchers etc. These considerations have led the investigator to use the descriptive survey method of research for the present study. In the present study all those steps and characteristics have been adopted which have described to be essential for the descriptive method of research by several authors.

## **Participants**

In this study, science students officially enrolled in 12<sup>th</sup> standard were taken from Govt. Inter Colleges running in Meerut province. Using simple random sampling, 100 science students were selected. Out of 100 science students only 90 students were finally taken because 10 students did not fill the scale properly.

## **Procedure**

To achieve objectives of this study, Psychological Stress Scale for Science Students (PSSSS) developed by the researcher was used to measure psychological stress of science students.

### **DEVELOPMENT OF PSYCHOLOGICAL STRESS SCALE FOR SCIENCE STUDENTS (PSSSS)**

#### **Selection of dimensions**

First of all, Science students were contacted and were discussed about causes of stress in teaching and learning of Science. Similarly, discussions and interviews were held with school teachers, administrators, Science educators and planners in order to find out the reasons of stress in Science students. Based on the variety of sources, as explicated in the preceding discussion, PSSSS was structured around the 12 dimensions of psychological stress i.e. curriculum transaction in science, content of science, infrastructure for Science, Science teachers, peers, workload in science, examination and achievements, home and family environment, vocational aspiration, health, communication problems and society.

#### **Preparation/Selection of Items**

10 to 15 items were constructed or selected from different sources related to each dimension of stress. Maximum care was taken to see that each item corresponds to the specific dimension under which it was constructed and they do not overlap each other. Each item was followed by five options, namely, 'Always', 'Often', 'Sometimes', 'Rarely', and 'Never'. Altogether 140 items were constructed and the following precautions were taken while constructing the items.

1. Each item was constructed in simple Hindi language so that it could be easily understood.
2. Careful attention was taken to make the items free from the factor of social desirability.
3. Sufficient care was paid to see that each item was closely related to stress.

#### **Experts Comments**

After preparation/selection of items, PSSSS was sent to 15 experts in the field of Science education and psychology with a covering page which includes instructions for experts opinions about items ambiguity, relevancy and sentence structures. They were also requested to exercise their judgement about whether each item in a particular dimension was representative of that dimension or not. Items on which the consensus level among experts was 80% or more were included and the rest were discarded. On the basis of expert comments, out of 140 items only 122 items were selected for try-out.

#### **Small group tryout**

After selection of 122 items on the basis of experts comments, cover page instructions for experts were replaced by instructions for students. The scale started with specific instructions for students regarding how to attempt it, which gave the students some background about what was expected to them. The students were given freedom to tick any one of the five options (always, often, sometimes, rarely, and never), depending on how often he/she felt concerned about the situation given in the item.

The scale was applied on 50 students. They were also asked to mention, if the items were either vague or different in respect of their meanings. The scale items were again checked on the basis of the responses obtained in the tryout. Items that belonged to any of the following categories were dropped. Statements which were responded to either favorably or unfavorably almost invariably. Statements which were considered difficult or vague. Thus, out of the 122 items, 4 items were rejected. The remaining 118 items were retained for final tryout and item analysis.

### Final try-out

The PSSSS with 118 items on Likert type five-point scale was administered on a sample of 370 science students of 12<sup>th</sup> class. Students were selected from seven different types of schools running in Meerut province. If the student has marked “Always “ as his / her answer in response to that item, then a stress score of 5 is assigned to it. Similarly, the responses ‘often’, ‘sometimes’, ‘rarely’ and ‘never’ are assigned scores of 4, 3, 2 and 1 respectively. To find out total score of each individual on PSSSS, Scores of 118 items were summed up. For the purpose of item analysis, scales were arranged in ascending order according to total score obtained by the students on PSSSS. Twenty seven percent (100) high scoring students and twenty seven percent (100) low scoring students were screened out. These two extreme groups were used to find out discriminative indices of each items using t-test. Those items whose t-values were significant at 0.01 level were retained in the scale. Thus, out of 118 items only 96 items were selected in the final form of the scale.

### Results

Analysis and interpretation of results are given objective wise in following sub headings-

#### I. Nature of Psychological Stress of Science Students

To study the nature of psychological stress, its all dimensions and its relationship with achievement of all the Science students (N = 90), mean, standard deviation (S.D.) were calculated which are presented in Table-1-

Table-1: Statistics showing the distribution of psychological stress and achievement of Science students of Govt. Inter Colleges ( N= 90)

Psychological Stress Dimensions	Mean	S.D.
Curriculum Transaction in Science	23.367	5.418
Content of Science	21.444	5.746
Infrastructure for Science	23.900	7.400
Science Teachers	25.378	7.135
Peers	22.256	6.236
Workload in Science	21.167	6.115
Examination and Achievement	26.156	6.041
Home and Family Environment	23.367	6.245
Vocational Aspiration	24.700	5.924
Health	22.800	6.924
Communication Problems	22.500	6.441
Society	23.600	6.689
Total Psychological Stress	280.633	48.315

It is evident from Table-1 that means of the different dimensions of psychological stress were found to vary from 21.167 to 26.156 which was of moderate level. It is also depicted from Table-1 that mean of total psychological stress score of all students was found to be 280.633 which was of moderate level. Further, mean stress score of the students was found to be greater on the psychological stress dimension *Examination and Achievement* in comparison to all the other dimensions, where as the lowest mean stress score of Science students was found due to psychological stress dimension workload in science. It means that Science students of Govt. Inter colleges were found to be more stressed due to *Examination and Achievement* in comparison of other dimensions and least stress due to its dimension workload in Science.

## II. Nature of achievement of Science Students

Achievement in Science of the students was considered as the marks obtained in Science in 12<sup>th</sup> class board examination. Mean and S.D. values are presented in Table-2-

Table-2: Statistics showing the nature of achievement of Science students of Govt. Inter Colleges (N= 90)

Variable	Mean	S.D.
Achievement	115.956	22.280

Table-2 shows that mean of Achievement scores of Science students of Govt. Inter colleges was found to be 115.956.

## III. Contribution of Psychological Stress on achievement of Science students

To find out the contribution of psychological stress and its all dimensions on achievement of science students, Simple and stepwise regression analysis was done. Results of regression analysis are given in Table-3-

Table-3: Summary of regression analysis for contribution of the dimensions of psychological stress on achievement of science students of Govt. Inter Colleges

Step	Constant	Variable Contributed	Beta	Adjusted R <sup>2</sup>	Percentage Contribution
1.	148.251	Vocational aspiration	-0.3476	0.1108	11.08**
2.	133.336	Science Teachers Vocational aspiration	0.2394 -0.3913	0.1572	15.72**
3.	140.052	Infra structure for science Science Teachers Vocational aspiration	-0.3806 0.3879 0.2956	-0.2956	25.97**
4.	143.716	Infra structure for science Science Teachers Vocational aspiration Communication Problems	-0.3261 -0.2659 0.4440 -0.2012 -0.2659	0.3013	30.13**

\*\* p < 0.01



It is revealed from Table-3 that contribution of psychological stress dimension vocational aspiration on achievement was 11.08%. Combined contribution of stress dimensions Science teachers and vocational aspiration was 15.72%. Combined contribution of stress dimensions infrastructure for Science, Science teachers and vocational aspiration was 25.97% . Combined contribution of stress dimensions infrastructure for Science, Science teachers, vocational aspiration and communication problems was 30.13% . All contributions were significant at 0.01 level. Contribution of other dimensions of psychological stress on achievement was not significant at 0.05 level.

#### IV. Relationship between Psychological Stress and achievement of students

To study the relationship between psychological stress and achievement of science students of Govt. Inter Colleges, Pearson product moment correlation coefficients were calculated. The values of correlation coefficients are given in Table-4-

Table-4: Correlation between psychological stress and achievement of Govt. Inter Colleges students (N = 90)

Variables	Mean	S.D.	Product	Correlation
<i>Achievement</i>	115.95	22.28	————	————
Total Psychological Stress	280.63	48.31	2898875	-0.30**
Curriculum Transaction in Science	23.36	5.41	242810	-0.09
Content of Science	21.44	5.74	221931	-0.16
Infrastructure for Science	23.90	7.40	244920	-0.30**
Science Teachers	25.37	7.13	267220	0.16
Peers	22.25	6.23	229350	-0.23*
Workload in Science	21.16	6.11	217938	-0.24*
Examination and Achievement	26.15	6.04	271044	-0.15
Home and Family Environment	23.36	6.24	242461	-0.11
Vocational Aspiration	24.70	5.92	253686	-0.34**
Health	22.80	6.92	234604	-0.24*
Communication Problems	22.50	6.44	230593	-0.32**
Society	23.60	6.68	242318	-0.29**

It is observed from Table-4 that achievement of G.I.C. students was negatively and significantly correlated with total psychological stress and its dimensions infrastructure for Science, vocational aspiration, communication problems, society at 0.01level. Negative and significant correlation was also found for psychological stress dimensions peers, workload in Science, and health at 0.05 level. But achievement was not significantly correlated with psychological stress dimensions curriculum transaction in Science, content of Science, Science teachers, examination and achievement, and home and family environment at 0.05 level. It means that achievement of G.I.C. students is significantly and negatively correlated with total psychological stress and its dimensions infrastructure for Science, peers, workload in Science, vocational aspiration, health, communication problems and society.

#### Conclusions

It is apparent from the findings of this study that Science students of Govt. Inter Colleges were found to be under stress in the process of studying Science at senior secondary level. Out of the12 dimensions that have been considered for taking as factors responsible for causing

psychological stress, the dimension *examination and achievement* has been emerged as the major factor causing stress. The reason for this is very obvious. Science students as compared to arts students are always pre-occupied with their performance in examination because Science subject is comparatively difficult to grasp and understand. There is a consistent pressure on students mind to secure maximum possible marks in exam. This is seen by the general mentality where even if a student achieves 90% marks, it is not considered good enough. Janet et al. (1994) found that 86% of the subjects reported their top stressors to be examination, amount of class work, lack of free time, long hours of study and grades. Science teachers, Curriculum transaction in Science, Home and Family environment and Vocational aspirations have also been emerged as major causing factors of stress among Science students. The stress resulting due to the dimension Workload in Science was found to be the lowest out of the twelve dimensions. Contribution of stress dimensions infrastructure for Science, Science teachers, vocational aspiration and communication problems was were found to be significant .When the relationship of achievement and psychological stress was studied, the findings illustrate that negative and significant correlation was observed between achievement and total psychological stress and its dimensions infrastructure for Science, peers, workload in Science, vocational aspiration, health, communication problems and society, but not significantly correlated to its all other dimensions. The findings from the present study would benefit various parties in the country in planning and conducting necessary programmes for the students so that stress-related factors could be reduced and better academic performance could be achieved by the students.

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# **A Teacher Helper Model for Effective Implementation of Inclusive Education in Sri Lanka**

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## **Abstract**

*This study aimed at developing a framework which will support primary teachers in the successful application of inclusive education. A qualitative methodology was used for the study. Classrooms observations and interviews with teachers were the primary means of data collection. Ten teachers from ten primary classrooms in four schools in Colombo district's Piliyandala educational zone completed background information. Interviews with ten teachers and ten classroom observations were conducted each in five occasions. The data was analyzed using constant comparison method and content analysis. The data showed that teachers used fewer instructional strategies to meet the needs of students with special needs. These strategies and practices, however, evolved from trial-and-error during the teachers' classroom experiences. The present study also found effectiveness of instructional strategies to be mixed. Lack of knowledge of teachers and required support services and facilities for inclusive education, make teachers in Sri Lanka in facing problems with students. Finally, this study revealed that Sri Lankan primary school teachers are less competent in assuming the responsibilities of an inclusive class. Some recommendations were made for planning, teacher training and further research based on the findings of this study. This study also attempted to develop a model that could promote and support inclusive education by advocacy instructional strategies for teachers in inclusive classes, analysing the insights gained from the study.*

## **Introduction**

An inclusive school is one that educates all students in the mainstream. It also entails that all students are provided with appropriate educational opportunities within the mainstream school setting. The Salamanca Framework for Action (1994) highlighted that

“the fundamental principle of the inclusive school as all children should learn together, wherever possible, regardless of any difficulties or differences they may have. Inclusive schools must recognize and respond to the diverse needs of their students, accommodating both different styles and rates of learning and ensuring quality education to all through appropriate curricula, organizational arrangements, teaching strategies, resource use and partnerships

with their communities. There should be a continuum of support and services to match the continuum of special needs encountered in every school” (p.11).

In this context the Sri Lankan schooling sector has adopted the principles of inclusion to develop a dynamic educational approach that respond to students’ diversity. Earlier reports on the inclusive education initiative in Sri Lanka raised several concerns, including limited teacher knowledge and skills to provide instructional adaptations towards meeting the needs of included students. A document entitled completion of a National Policy on Disability (2003) ministry of social Welfare traces the history of special education in Sri Lanka and reports that the fulfilment of special educational needs of children who have been included to normal classes is not adequate. Alwis (2000) highlighted that there were no any special strategies designed for the students with special educational needs (SENs) in mainstream and that therefore teachers in Sri Lanka are unable to cater to the individual needs of students with disabilities. King (2005) in his report on strengthening special education by creating inclusive schools in Sri Lanka recommended the development of inclusive instructional methodologies to support curriculum across grades 1 to 13 and across all subject areas. Furuta(2009) stated that it is essential to make changes in the present grade promotion system in school of Sri Lanka for children with disabilities. These studies pointed out that Sri Lankan teachers when implementing inclusive education showed a lack of skills needed for tailoring instruction to the needs of students with disabilities. The present study was designed keeping this need in view and this study, would be useful in gaining new knowledge on how children with SENs are learning and also as a way of finding out how teachers apply instructional strategies to provide ‘full learning opportunities’ to the diverse learners in the classroom.

### **Aim of the study**

The aim of this study is to explore the application of inclusive education in line with the instructional strategies used and learning opportunities provided to cater to diverse needs of children and to develop a frame work which will support teachers to apply inclusive education successfully in their classrooms.

### **Research questions**

1. To what an extent do the teachers use the strategies identified through the literature review for effective inclusion of students in primary classes,
2. How effective are the instructional strategies used by teachers for application of inclusive education in primary classes?
3. What are the problems faced by teachers in using instructional strategies for effective application of IE?
4. What framework would support primary teachers in successful application of IE?

### **Methodology**

The researcher selected the qualitative research approach for the study. A qualitative study focuses on processes, meanings, and understandings. The content must be rich enough to ensure that a correct and multidimensional description can be obtained. It is presumed here that meaning resides in people’s experiences, opinions and statements, and that this meaning can be mediated and made comprehensible through observations, interviews and interpretation

by the investigator. In a qualitative research, researcher is considered as the primary data collection instrument. This provides opportunities for the researcher to go into every detail what are necessary. The researcher's role in a qualitative study is of utmost importance since "the investigator is the primary instrument for gathering and analyzing data" (Merriam, 2001, p. 20). Following the above described approach, in the present study also, the researcher investigated the process of instructional applications to the students with SENs by observing classrooms and interviewing teachers and describing it to gain knowledge about the phenomena under investigation. The researcher thus entered the field where teachers were actively engaged in the daily practice of educating students with SENs together with students without disabilities. Employing description and quotes from participants, this study attempts to present to its audience, those interested in application of instruction strategies in inclusive classrooms, a comparative analysis of qualitative data in the forms of observations and interviews.

## **Participants**

Researcher selected ten primary classrooms from four schools from Piliyandala Educational Zone, in Western Province for the study. A purposive sampling strategy was used to identify the ten inclusive classrooms in four schools. There were 74 primary classrooms altogether in the four schools selected and ten classrooms were identified as inclusive classrooms. The final selection of the schools was based on the following criteria: (a) convenience of travel to the school; (b) the willingness of the principal for his or her school to be included in the study; (c) services provided by the school for cross categories of specialties of (SEN) children; (d) integrated programs not being implemented in schools; (e) the variety of facilities available in the school; and (6) whether the school is a mixed (girls and boys are studying together in the same class) school. Across all ten classrooms a total of 10 teachers and 11 children with special needs were identified as participants in the study. In order to maintain teachers anonymity, the teachers were coded as Teacher No. 1, Teacher No. 2, Teacher No.3, Teacher No. 4, Teacher No. 5, Teacher No 6, Teacher No. 7, Teacher No. 8, Teacher No. 9, and Teacher No.10 The student in Teacher No.1's class was an autistic child (Pinidu) and the student in Teacher No. 2's class was a student with intellectual disability (Sunil). Teacher No. 3's class had two hearing impaired twin brothers. ( Manura and Anura) Teacher No. 4's class had a student who was twice exceptional (Anuska). Teacher No. 5's class had a mute student (Himali) and in Teacher No. 6's class also was a mute student (Saduni). Teacher No.7's and No. 8's classes had autistic students (Hema and Ravi). Teacher No. 9's class was a student with dysfluncy (Gamini) and Teacher No.10's class was a student of an Attention Deficit Hyperactivity Disorder (Mala).

## **Data collection procedure**

Data were collected over a period of six months with five visits to each of the classrooms. Interviews and observation were used as the main means of collecting data to find answers for the research questions. All individual interviews were audio-taped and transcribed verbatim in to English. The researcher observed the classrooms with the assistance of a colleague. During observation the researcher took the field notes and colleague who helped the researcher in the data collection process stayed outside the classroom and operated the video camera to recode everything happening in each classroom on five occasions. In doing so, the researcher was able to collect in-depth information in a non-obtrusive manner while the teachers were teaching in their classrooms.

## Data Analysis and Interpretations

The data were analyzed using the constant comparative method. The preliminary analysis was used to continually compare and contrast the findings, to note any emerging trend, as well as to guide later interviews and observations, clarify findings, and fill information gaps. After all the interviews and observations were completed, data within each classroom were analyzed descriptively to develop a complete picture of the events, processes, and relationships between factors in each classroom in four schools. The third stage analyzed data from across the inclusive classrooms to identify key findings evident across the teachers.

## Results

This research investigated the effects of application of instructional strategies in inclusive classrooms. Altogether a total of ten teachers and fifty lessons were observed during the whole study. The classrooms observations reflected that teachers used Common Instructional Strategies for whole-class instruction. Teachers of Arithmetic classes in this study have used some common instructional strategies in developing respective lessons. The teacher No.2, No. 4, No.5, No7, No.8, and No. 10 used the black board when they were presenting the lessons. Teacher No.2 started to draw a table on the black board from the information that students provided. Moreover, the teacher started a discussion by asking questions on how minor accidents had happened to the students. Students participated by giving such answers such *falling down from the bicycle; when climbing trees; fell down from the swing etc.* Students were giving more information to the teacher but Sunil was silent. Teacher noticed this and pointed to a scar of a wound in the Sunil's hand and questioned "Sunil, what is this mark? What happened to you?" Sunil whispered "my friend pulled me". During the discussion the teacher wrote down the student's answers on the black board and the teacher wrote Sunil's answer also on the black board.

The teacher had taken Sunil into consideration and tried to get Sunil involved in the lesson and it was successful. It appeared that in this lesson teacher tried hard to help the student with SENs in her class.

The teacher No. 4 drew a *bar chart* on the black board and started to explain to the whole class the way that the height of a bar chart corresponds to the number of the objects. Though the teacher told that Anuska is interested in such things as graphs, tables Anuska did not participate in the lesson and it showed that the way that teacher presented the lesson did not suit the child's learning style. Anuska climbed to a desk at the back of the class and started to fix some pictures on the wall. The teacher tried to stop that behaviour. "Anuska get down, I don't need any noise here" but Anuska continued with her work as it was her desire. It appeared that this teacher was not skilful enough to work with the child who presented the features of gifted. Most students with SENs did not benefit from the common instructional strategies. Sometimes the obvious problem with using only a few standard teaching methods is that they cannot cater to the students, even those who do not have identified special challenges naturally have varying strengths, needs, and styles of learning. The present study also found effectiveness of instructional strategies to be mixed.

The teacher No. 6 and the teacher No. 9 displayed real objects when they present the lessons. The Teacher No. 6 displayed to the whole class how to read digital time by presenting a digital clock and the teacher No. 9 displayed some coins to the whole class and highlighted the features how to identify particular coin. Ott (1997) provides examples of multisensory

teaching methods for teaching mathematics, suggesting the need for pupils to work with concrete objects and to verbalise what they were doing. Confirming Ott's argument Gamini who was in teacher's No.9's class coupled with a student and inspected the coins enthusiastically. Many observed teachers in the subjects of mathematics and environmental studies used graphs, charts accordingly graphic organizers for presenting information to the students and it helped students to understand the concepts easily. It confirms the findings of Fisher and Schumaker (1995) that graphic organizers which are visual displays used by teachers help students to organize information in a manner that makes the information easier to understand and learn. But these strategies and practices, however, evolved from trial-and-error efforts made by the teachers in classrooms. Moreover the present study found very little 'specially designed instruction' delivered uniquely to the students with learning disabilities

It was seen that teachers devoted few more minutes for the students with SENs at the end of the lesson or when they were giving group activities or assignments to the other students. On one occasion as it was a listening lesson Teacher No. 2 gave visual materials to the student with Autism because the teacher had identified the learning style of the child. On another occasion Teacher No. 3 walked continuously around the class monitoring students' work and when she came to Anura and Manura she gave them separate work sheets. Later the teacher ended the lesson by giving some mathematics problems from the text book as home work to practice on and she gave separate work sheets for both of them with five easy sums and she asked them to do them for home work. She planned separate work for them parallel to the curriculum. Teacher No.10 had also recommended the Grade One reading book for Mala. Although it was grade one reading book, Mala started to name the pictures that appeared in that page instead of two letter words. Teacher gave one to one instruction by holding Mala's finger on the text and started to read letter by letter the way it sounds and Mala followed the teacher in the traditional way. Teacher repeated several times with Mala. Teacher assigned a separate reading book for Mala according to the teachers' understanding of how to differentiate instruction to the child's need. But one-to-one instruction was delivered in a traditional way without considering Mala's disability and it appeared that it was the teacher's lack of knowledge. The teachers who participated in the study gave one-to one instructions assigning separate work sheets and providing lower grade reading books and story books filled with pictures as a means of using differentiated instructions. It thus confirms the findings of Carbonaro and Gamoran (2002) who found that positive outcomes are derived from the use of differentiated instruction. For instance, when students are encouraged to select reading material of interest to them, they are more likely to demonstrate substantive engagement. But No specific, directed, individualized, intensive, remedial instructions for students who were clearly deficient academically and struggling with the schoolwork was observed.

Teachers designed peer support in observed classrooms according to the child's need. The teacher number 3 assigned peer support mostly and it provided with evidence that students with hearing impaired were more benefited with peer support than the other special educational needs students in selected classrooms. The observations illustrated how Teacher No.3 involved peers to assist students with SENs.

Once the question been asked students' hands were up. Teacher then stopped near the students, she wanted to respond and pause for several seconds before calling the student who was hearing impaired. There was a definite pattern to the length of the pause. When the students with special needs were to be called on, the pause was longer and the teacher coming in front of the student repeated the question several times. If the response was incomplete the student was referred back and instructed to search for the correct answers with the help of



peers. On another occasion Manura and Anura struggled with their questions, but the teacher and peers were there to assist. When they were in trouble the question was explained to them by the teacher giving them some concrete examples. The teacher repeated and rephrased what has been said to earlier. Then the teacher assigned peers to help them to solve the problems and gave them more time.

It was observed that teachers presented pictures, posters and other related materials when they were teaching in their classes. This held the attention of students of SENs as well as other students. That was a common aspect in observed classes. There were no specially designed materials in these classes during observations for the students with SENs. But for the benefit of autistic students Teacher No. 1, No. 7 and No. 8 large brightly coloured pictures were prepared with parallel to the lessons and those teachers devoted a little time with them giving one to one instructions using those pictures during the lesson. On one occasion Teacher No. 1 sat close to Pinidu with a special assignment. Pinidu was given some pictures which included words and teacher described the pictures to him. On another occasion the same teacher gave some cards to Pinidu clearly including the steps and pictures related to the lesson. Teacher No.7 in Saduni's class assigned students to create poems, verses, essays, and short stories and she assigned Saduni to colour some pictures instead of creations. Painting also could be mentioned as one type of a creation that the teacher planned to measure Saduni's creativity in a different way by giving specially designed materials for her. Teacher No. 8 used large brightly coloured pictures of fruits to build up a pictogram with Ravi. This held the attention of Ravi who had been diagnosed with autism, who was fond of pictures. The teachers observed in this study used low cost materials to enhance of teaching and learning of students with SENs in their classes but the observations also revealed the teachers were unaware of the technology that is available. In the observed classes teachers used instructional materials such as pictures with words, brightly coloured pictures, real objects and lower grade reading books and demonstrated what had been recommended by Schmit, Alper, Raschke, and Ryndak (2000), Healy, Aram, Horwitz, and Kes- sler (1982), MacDuff, Krantz, and McClannahan (1993) and Bergman (1999).

In observed classes there were no separate assessment systems for pupils with SENs apart from the measures normally used in classroom assessments. Teachers No.1, No. 2, No.3 and No.4 used the strategy of questioning to assess students during the lesson. These teachers frequently made use of the method of questioning during lessons to evaluate student's knowledge. In a language lesson, Teacher No. 4 started the lesson by reciting poetry in the reading book. Then, she explained step by step with the figurative meanings and used questions to draw out the children's existing knowledge. "Why did that small boy ask about the colours from the mother?" "Why did that small boy cry"? But the teacher did not plan for higher order questions for Anuska who is twice exceptional who showed extra ordinary abilities as well as poor reading writing skills as the teacher knew her abilities. In the classroom her extraordinary ability seems to vanish because of these types of evaluations. Teachers No.1, No. 2, No. 7, and No. 8 maintained portfolios. Three teachers out of the above four taught autistic students and therefore it could be concluded all the teachers who were teaching autistic students maintained portfolios. However, these teachers did not plan various methods to monitor students' learning.

Teachers reported about the huge class size and insufficient resources, such as administrative staff, teacher assistants, and general helpers, lack of material resources, and physical structures as a challenging factor in their schools. All the teachers said that these students have made their teaching a little more difficult because it involved bringing these students in, managing their behaviour, modifying instructional strategies and activities.



“It’s a little bit more difficult”

“I think I get frustrated, also lot of teachers get frustrated. It’s not that we want to reject the students; we feel we won’t be able to meet their needs adequately” and the biggest reason teachers burn out is that they feel it’s ineffective

“I think regular teachers are not too efficient and effective to teach SENs children”.

All the teachers expressed their concern for insufficient time.

“There is not enough time to spend with children with SENs and not even with normal students. Huge class size extracurricular activities and heaps of paper work”

“There isn’t enough time to work with children with SEN. We have over forty students in a class”.

More over, teachers emphasized that they need to have knowledge about various disability types and their characteristics

“it is very essential to identify the characteristics of disability types”.

Teachers said

“we don’t have enough books to read in Sinhalese language regarding special education. If there are Sinhalese books at least we can read and enhance our knowledge”.

“I don’t have much knowledge about how children with SENs should be taught”.

“We want to get knowledge about teaching techniques for students with SENs and behaviour management techniques, and one of the most important things is to know how to use assessments”

All the teachers felt that they needed more in-service training and education to teach in an inclusive class. All teachers of this study had commenced their careers unprepared to teach to the diverse types of children in their classrooms. The findings of this study confirm those of numerous surveys of Houck and Rogers (1994); Schumm and Vaughn (1991); Semmel, Abernathy, Butera, and Lesar (1991), who pointed out that ‘teachers have reported that they have insufficient skills and training to adequately serve students with special needs’.

Moreover, all the teachers stated that the schools do not possess, required facilities for inclusive education. They stated that there were no resource room and there were no special educational counselling service and no special materials, tools from which the students with SENs could benefit in the school. They also mentioned toilets and other physical facilities are not in the schools.

“The physical facilities of the schools must be accessible to the child for inclusive education”.

All the teachers’ emphasized that

“We need a service which is not providing instructions to us. Occasionally, advisors of the special education are coming to the class and give us instructions. Most of the instructions are related to the behaviour management rather than on how to modify the curriculum or our

teaching methods to benefit children with SENs. We need someone to work with us taking equal responsibility.”

Teachers recommended that certain practices be implemented, such as (a) offering opportunities to visit schools that were moving towards inclusion, (b) providing better training for instructional adaptation with modern equipments, (c) making assessment process more appropriate to classroom application.

Finally, research findings of this study revealed that Sri Lankan primary school teachers are less supportive to assume the responsibilities of an inclusive classroom. Thus, our study confirms the findings of Deno, Foegen, Robinson, and Espin (1996) that, ‘a basic tenet of inclusive education, individualization, was not being achieved’ and of Friend and Bursuck (2002) general education teachers are left with the primary responsibility of providing instruction in the classroom and, thus, must be familiar with effective instructional strategies that can be used for diverse student needs’.

## **Recommendations**

### **Recommendations for planning.**

- Develop national principles of inclusion highlighting learner diversity and that teaching is about addressing diversity of all learners through curriculum access and quality instructions.
- Create and coordinate a centralized support structure for teachers to facilitate easy access to information, resources and services. The centralized support system may take the form of a National Institute for Inclusion Studies and its functions would be research, development of inclusive instructional methodologies, and capacity building and this Centre could be linked to Zonal Resource Centres.
- Develop an Inclusive Support Resource Centre in each zone to provide support to student assessments, support to classroom teachers to develop effective instructional methodologies, alternative assessment procedures, and to develop effective parent support and awareness and educational programs.
- The class size must be decreased to provide quality education to students with or without SENs in the classroom and develop the physical facilities of schools to make them more accessible for students with SENs.
- Establish formal and ongoing collaborative partnerships with other related professional services.

### **Recommendations for teacher training.**

- Develop a system to facilitate training and support programs for all primary school teachers that are based on the principles of inclusion and provide ongoing school based in service training supporting inclusive practices. This system may require a coordinator position.
- Immediate action should be taken to review all pre-service teacher training programs so that they embrace the principles of inclusion and provide students with skills in instructional strategies that are effective in supporting a diverse group of learners.

- Inclusive education for children with disability should be a compulsory component of the teacher education curriculum in University Faculties of Education, the National Institutes of Education, and National Colleges of Education, Teacher Training Colleges, and Teachers 'Centres'.

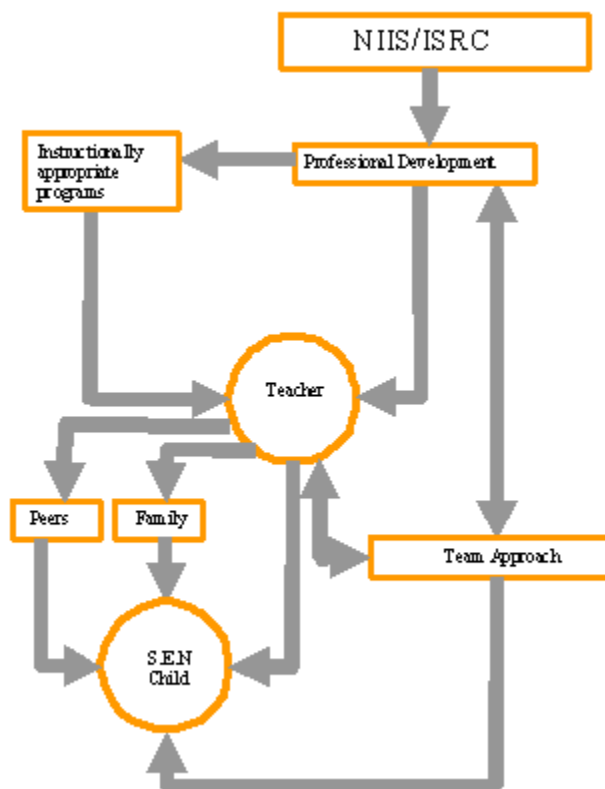
### Recommendations for research.

Further research could play an important part in studying the development of inclusive schools and in critically analyzing the concept of inclusion and making contributions towards fundamental changes in educational practice. Conducting case studies, action research and quantitative studies can make a valuable contribution to a more comprehensive data base for effective inclusive education to compensate the limitations of this study as well as lack of adequate research studies in Sri Lanka regarding inclusive education.

### A framework for a support programme for teachers

This study attempted to develop a framework that could promote and support inclusive education by advocating instructional strategies for teachers in inclusive classes, analysing the insights gained from the study. This framework provides the elements of a support program based on the research findings. The elements included in the framework were selected because the findings of this study revealed that Sri Lankan primary school teachers are less able to assume the responsibilities of an inclusive class.

**Figure. 1 A Teacher Helper Model for Effective Implementation of Inclusive Education in Sri Lanka**



According to the frame work the attention is placed on the inclusive classroom teacher. National Institute for Inclusion Studies (NIIS) and Inclusive Support Resource Centre (ISRC) has the responsibility of professional development of teachers to address all aspects of inclusive education. Through professional development the teachers will gain knowledge and skills to prepare instructionally appropriate programmes. By giving that knowledge to teachers the teachers will be able to help the students with SEN and their families. Teachers can provide necessary skills and knowledge to peers for social acceptance (both disabled and non-disabled), support for collaborative learning & other activities.

Necessary support can be given to the teachers to teach in classrooms by the team approach. More over the students with SEN can straight get the help from the team approach. The teachers too can work together with the team. Educational authorities provide inclusion as a mission for the whole school, support for professional development of teachers and other staff, negotiations for funding, resource provision and allocation

In empowering in-service teachers with the knowledge and skills regarding best inclusive practice related to instructional strategies, professional in-service training should be focus on:

### **Instructionally appropriate programs**

Instructions will be designed to address the needs of the child and the grade-appropriate instruction in the learning outcomes for students with and without disabilities, and will also address accommodations, adaptations, differentiation and other modifications to materials, strategies, equipment and assessments so that all students can participate in general education lessons while working on their individualized goals. Teacher as a key person of the process of inclusion should develop skills for instructional adaptations.

Especially children with diverse needs require multi - sensory approaches for better understanding. Therefore, teachers need to create some alternative instructional materials and /or to modify the available materials. Planning to address a wide range of needs within a single class requires that teachers be able to provide work at different levels, deliver this at a variable pace and use a diversity of resources according to the needs of individuals. Since differentiation is clearly important, it is necessary that all teachers develop this skill to enable them to be confident when addressing the needs of a wide range of learners.

Teachers should develop skills to design, select, and use particular teaching approaches and strategies which emerge from perceptions about learning and learners. Resources will be developed so as to: cater to pupil variability; introduce new trends in each discipline; provide in-depth treatment of selected topics; provide locally relevant knowledge.

Assessment for learning is the process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to go and how best to go. Therefore, teachers should develop skills of alternative assessment strategies for better understanding of their children.

Inclusive means providing all students enhanced opportunities to learn from each other's contributions. So peer-support can enhance learning as in which students take an instructional role with classmates or other students. Thus teachers should develop skills to apply peer support in their classrooms.

Especially, the parents of children with diverse needs are often require counselling due to frustration, stress, and also lack of knowledge of the educational services of their children. Therefore, school based counselling programmes are essential to achieve success in inclusive education and teachers can serve as counsellors of the parents of SEN students.

Moreover, areas for staff development include collaboration and co-teaching skills that can be defined as two or more professionals who jointly deliver substantive instruction to diverse or blended groups of students in a single space. Therefore, all teachers should develop skills collaboratively plan, teach, and evaluate students.

Behavioural and classroom management can be mentioned as other areas of professional development because children with diverse characteristics may exhibit different behavioural patterns in the classroom. Positive behaviour support help to create classroom environment more conducive to learning, and assist students with behaviour problems to improve their behaviour. Moreover, it is important to consider the classroom management when working with diverse needs of children. The layout of the classroom, positioning of furniture, seating arrangement, location of specific areas for specific activities, Varying instructional groups and also the reduction of distraction that affect pupil participation and inclusion. Therefore, teachers should develop their knowledge about behavioural and classroom management strategies.

Fostering positive and cooperative social relationships can be defined as the development of positive social relationships and networks among the students in a class. But it is a particularly problematic goal for students with moderate and severe disabilities because this is the group of children who have been most routinely segregated from contact with “typical” children in general education classrooms. Thus teachers should develop skills of fostering positive and cooperative social relationships.

Disability category, does not fully define a child’s educational needs. However, children coming within a broad category may share some needs in common. It is therefore essential have that fair knowledge about disability. Therefore, teachers should develop their knowledge about the theoretical background of these facts and practical skills.

## **Team Approach**

Inclusive education is a team effort and approach. All team members should recognise their responsibility and accountability. Collaboration among general educators, special educators, and other school personnel occurs on an ongoing basis. At the district level, the school level, and within instructional teams, collaborative structures are followed for clarifying issues, brainstorming ideas for solutions, establishing priorities, assigning responsibilities for actions, and reviewing progress toward defined goals. Principals, supervisors, etc. support the team with shared leadership and using brainstorming structures to solve problems. School administrators provide a vision and leadership and welcome all students into their school.

Collaboration between and among school staff is necessary for joint curricular planning and individual student planning. Both special and general educators need to adopt new roles in planning and delivering lessons in the classroom, evaluating student progress, and designing modifications that are needed for individual students. Both general and special educators have responsibility for the delivery of special education services. when working with children with diverse needs, teachers need support assistants, and inevitably be required to work in partnership with professionals belonging to disciplines, such as health, medical, Para-medical, social welfare etc. Therefore, it should develop a shared culture of responsibility or collaborative

working. Parents can be a useful additional resource when carefully managed and valued in the inclusive classroom with diverse needs of children. Teachers are required to develop a programme to get the support from parents and also to give support to parents, thereby providing opportunities to encourage challenges that may emerge. When teachers and parents work as a cooperative team and use their energy in an orchestrated way on behalf of the child, then quality and excellent progress could be seen.

Finally, teachers will empower to enter the teaching profession ready to maximize the learning of all children. Around the child should be family, peers, teachers, educational authorities.

## **Conclusion**

This study showed that regular class teachers have not changed their teaching procedures or processes to provide appropriate instructions for all students in an inclusive classroom. Teachers were trained accordingly through separate mainstream and special education teacher preparation programmes. This training did not provide trainees in mainstream education with the experience to develop the necessary skills and dispositions to handle learners with disabilities in their classrooms. Teachers require additional knowledge, skills and competencies specific to a wider range of diverse needs.

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# **Developing Entrepreneurship Skills: A Challenge for School Education in India**

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## ***Abstract***

*As a knowledge and information society, Indian economy is undergoing a rapid change. The scope of entrepreneurship development in a country like India is tremendous, especially when there is a widespread concern that acceleration in GDP growth in the post reforms period has not been accompanied by a commensurate expansion in employment (GMR-2002). The problem, of course, is the skill crisis and mismatch in quality of human capital. In addition, there is serious concern for school drop outs. In India, the educational statistics show that of the children enrolled in class 1, a very large number (approx. 49%), drop out the time they reach the secondary stage of school education (SES, 2008-09, GOI). Gradually, they sink into the ranks of unemployed. They look for jobs but do not have the competence or skill required for the jobs that are available. The paper presents an epistemological framework for integrating entrepreneurship education across the school curriculum in general and secondary education in particular. The paper proposes the substantial amount of pedagogical understanding as to how it can be inclusive and integral to the objective, content and pedagogy and assessment practices for different stages of school education in general and elementary stage of education in particular. The paper takes on board the*

*development of work cum life skills and thereby carving out its path across the overall school curriculum.*

## **Introduction**

Entrepreneurship development contributes to the industrial development of a country in several ways i.e., assembling and harnessing various inputs, bearing risks, innovating and initiating the techniques of production to reduce costs, increases its quality and quantity and expanding its horizons. It is, thus, regarded as the determining factor of the industrial and economic growth of a country. Entrepreneurship development stems out from the economic analysis that small firms contribute considerably to the economic growth and its vitality. New and small scale businesses create over-whelming new jobs and in course of time, these firms grow into large firms. The internet revolution and many successful web based entrepreneurial firms have highlighted the visibility of entrepreneurship. Amazon .com, a leading online book store founded by Jeff Bezos in 1994, is the biggest example of internet retailing whose revenues

elevated from 15.7 million US \$ to 48.67 billion US\$ from 1995 to 2011 respectively employing approximately 69,000 employees.

Many countries across the globe are now heading towards privatization with a hope that it will lead towards more entrepreneurial activities. This is the reason why a great deal of attention is being extended to the subject of entrepreneurship over the past few years. This has aroused interest in entrepreneurship development among general education and has also led to the growing demand for entrepreneurship education.

An approach to entrepreneurship considers the following questions:

- i. Where do entrepreneurs come from?
- ii. What motivates them?
- iii. How do they reach to a point where they are ready to initiate a new venture?
- iv. Is entrepreneurship a practice like law or medicine?
- v. Else, it is an art consisting vision and situations (circumstances) based on persistence, hard work and creativity?

There has been an academic debate whether entrepreneurship attributes can be developed in individuals or are the product of genetics. The weight of opinion supports the view that these can be influenced considerably. However, there is a universal agreement that entrepreneurship is associated with the manner individual's create and implement new ideas, respond proactively to the environment and thus bring change. In the educational context, it explicitly focuses on developing understanding and capacity for pursuit of entrepreneurial behaviours, skills and attributes in widely different contexts. Different individuals have different mix of capabilities for demonstrating and acquiring entrepreneurial skills and attributes. These behaviours can be practiced and learned hence, it is important to expose all students to entrepreneurship education. It, however, requires concerted efforts to 'catch them young' so that the increasing youth population looks at entrepreneurship as a lucrative career.

### **Does education at the school level fit into this revolution?**

The first decade of the 21<sup>st</sup> century is characterized by a profound transformation in the Indian economy. Communication technology has opened the four walled office operations with systems like *World Wide Web* forging global connections. New companies and newer technologies are coming into existence, at an unparalleled rate creating exciting employment opportunities for enterprising individuals, willing to take risk and advantage of these challenges. Affordable user friendly office technology has made it possible for organisations and communities to flourish in the new economy, in a professional and cost effective manner. This requires an enterprising spirit that looks upon challenge as an opportunity – not an obstacle; an attitude that seeks creative ways to meet challenges-instead trying to block them. This makes it even more important than ever before that students gain basic understanding of the world of economics and business.

### **School education and skill development: basic statistics**

India has been growing at a relatively high rate in the last few years and is likely to be the largest economy in the world by 2050. In contrast to the developed economies, India is a young country with about 63% population currently in the working age group of 15-59 years. This is a plus factor for India because number of studies has found that nascent entrepreneurship prevalence rates are the highest in the age group of 25-34 (EDI, 2012). But, this demographic

dividend may prove to be a dead weight if we are not in a position to engage our youth in creative pursuits through appropriate skills including entrepreneurship skills. Improved training and skill development is critical for providing decent employment opportunities to the growing youth population. Although institutional structure of vocationalisation of education has been put in place by rolling out the National Vocational Education Qualifications Framework (NVEQF) as its recent initiative by GOI in the 12<sup>th</sup> FYP; there is still a long way to go. India's unorganised sector accounts for a 395 million workforce constitutes 86% of the total workforce. This workforce is characterised by low skills, poor productivity and poor income. Only 2.5 % and 12.5% of the workforce are exposed to formal and informal vocational training respectively. There is a severe deficiency of skills based on gender and rural/urban divide. This leads to imbalances in demand and supply and mismatch between training and employment needs. The Kothari commission (1964-66) suggested the restructuring of education implying ten years of undifferentiated education for all with diversification into academic and vocational streams at the plus two level. The National Working Group on Vocationalisation of Education (Kulandaiswami Committee, 1985) reviewed the vocational education programme in the country and developed guidelines for the expansion of the programme. The Committee also suggested Socially Useful Productive Work (SUPW) to assume the form of training in 'life skills' and should be given pre vocational orientation. The National Policy on Education, 1986 advocated introduction of systematic and well planned vocational education programme which can be rigorously implemented to enhance employability, reduce the mismatch between demand and supply of skilled manpower and to provide an alternative to those pursuing tertiary education. The adoption of NPE and its programme of action (1986 revised in 1992) and centrally sponsored scheme 1988 led to the nationwide coverage of the vocational education programme in India. However, the implementation part of vocational education programme remained weak. Only 8% of all senior secondary schools in India impart vocational education which caters only 3% of the students against the set target of 25% diversification at the higher secondary stage. Dominance of supply side factors, poor infrastructure, and absence of qualified teaching staff, curricula obsolescence, and lack of vertical mobility led to the low esteem among vocational education takers.

## **Need for Entrepreneurship Education**

In today's changing work place, it is fundamental that students develop skills and attitudes that enable them to participate effectively in the post industrial society and make valuable contribution towards the community. The functional object of education is to prepare child to be a conscientious citizen, leading a productive life. There is a need to provide students early and frequent exposure to what 'enterprising behaviour' means in a rich variety of contexts, whether in employment or in self employment. The skills of entrepreneurship will, thus, help redress the twin problems India continues to face serious challenges relating to unemployment and poverty.

The question now is: *how should it evolve?* We cannot do this by merely changing the way teaching learning happens in the school set up. The word 'competence' is often used interchangeably with terms such as skill, capacity, capability, attitude, proficiency and overlapping meanings. Together with skills, competence implies a set of dynamic attributes necessary for understanding and implementing a task. It has an all encompassing meaning that conveys the level of necessary preparedness for carrying out set of tasks, reliably, accurately and responsibly in accordance with pre-defined standards in a given social context. Relevance of curriculum to the real world is extremely important. It is not necessary to look at the high technology artefacts to value product related work. One has to look around to realise

that every aspect of human surroundings necessitate enterprising behaviour. A systematic study of entrepreneurship, thus, provides opportunities for developing vital skills of adapting and surviving in a continuously changing environment.

*Research and curriculum* development are of particular importance to ensure entrepreneurship's rightful place among the academic disciplines. It must be deeply embedded into the curriculum to ingrain entrepreneurial mindset among students that can be applied in various forms of entrepreneurial settings. In many countries across the globe, entrepreneurship is offered as a 'add on' to the existing curriculum rather than being integrated in different areas of study. Instead, it should be focused on 'learning for' rather than 'learning about' entrepreneurship. Entrepreneurship education is not an extra or a, 'nice to have, item. It is not an option (European Commission, 2006).

The other major determinant of change is the teacher education and expanding their role effectively. To move away from the traditional role of a teacher to act as a facilitator in the process of child's learning and knowledge generation activities is not a small step. Using active learning methods are more complex than traditional teaching methods. Educators/facilitators, therefore, must be able to create an open environment of trust in which student's develop confidence to take moderate risks by learning from trial experiences and gaining from both successes and failures. Such pedagogy requires greater emphasis on experiential and active learning because it sharpens child's ability to think clearly, critically and reflectively. Schools provide a safe environment for students to stretch and test themselves, to explore and turn ideas into action. Lastly, the biggest challenge in entrepreneurship education is the *assessment* of entrepreneurial behaviour among students. While there is some evidence that teachers can recognise entrepreneurial behaviours, there is no common code for recognition, and no satisfactory measurement system that allows for behaviours to be coded comparatively and weighted. The development progress needs to be monitored over the period of time. There are, however, some means of measuring and evaluating outcomes from entrepreneurial processes such as progress in project work, completion or designing a business plan. However, this is still not a criterion because one can be very entrepreneurial in producing a business plan or it could be a result of a very formal or uninspiring process. Setting up and running a venture, either real or simulated, is also another measure but the results arising out of it is quite subjective indeed. Quite a substantial work is available to assess the attributes of adult's entrepreneurial performance, but it is not yet applied to the school education system. Unless more progress is made in methods of assessment, the issue of assessment and accreditation will be left on the back burner. Evaluation of entrepreneurial behaviour, attributes and skills is a formidable task.

Entrepreneurship education is a long-term investment and results take time. It has been compared to a tree planted on the understanding that it will take many years to come to fruition. So, it is not a good idea to keep digging it up to look at the roots (FSMED, 2002) Changing young people's behaviour, skills and attitudes is not expected to happen overnight. There is 'no one size fits all' solution for entrepreneurship education. The challenges and opportunities for entrepreneurship vary dramatically for different segments of the educational journey. It is, therefore, not possible to take only one approach. Given the multifaceted nature of entrepreneurship, educational programmes must also be multifaceted. It is critical to make the following points:

1. Entrepreneurship as a pedagogic medium will be governed by the developmental stage of the child. This consideration will include factors such as the psychological age of the child, physical strength and skill level.

2. The pedagogic planning must ensure that the chosen type of work is undertaken, as far as possible, by a collective of children in order to encourage a sense of cooperation, teamwork and community spirit. It is emphasised that the allocation of work to children must be free of all considerations of class, caste, religion, gender or social status of the child.
3. The tasks undertaken by students do not necessarily indicate their future profession of livelihood. Indeed, it is for developing a range of skills and other generic competencies from elementary stage to the higher secondary stage.

Consistent with these criteria, the proposed epistemological framework for entrepreneurship education at different stages of school education *viz.*, elementary stage (I-V and VI-VIII), secondary stage (IX-X) and higher secondary stage (XI-XII), can be precisely stated in terms of following objectives:

1. To operationalise entrepreneurship education at different stages of school education as an *objective*, an *approach* and as a *specific subject*.
2. To establish a methodology within which effective teaching-learning can be developed with regard to:
  - a. The degree to which entrepreneurial learning is regarded as an extra-curricular activity and as an intrinsic part of school education.
  - b. The content and form of integrating entrepreneurship at the elementary stage of education (grades 6, 7 and 8), and its progression thereof.
  - c. Identify a set of actual behavioural outcomes to validate the construct of entrepreneurship development in school education.
3. To promote the culture of entrepreneurship into the school system.

### **Charting out the Road Map**

A journey of thousand miles, said Confucius, ‘begins when one puts one step forward’. But this step has to be in the right direction if one is to reach the desired goal. Otherwise, direction and destination will continue to intermingle or cross paths. The baffling problem here is how to be sure at the beginning of the journey that we will arrive at a suitable destination. The answer is: ‘Hypothesise and Test’. Look forward, go ahead and look backward more or less at the same time. The chances are that the circuitous route can be straightened out once the journey continues. A goat’s way becomes a goat path which becomes a road and finally a thoroughfare with signposts over the years.

Bringing entrepreneurial life skills into the school curriculum requires substantial amount of pedagogical understanding as to how it can be integrated with learning, in parallel, as an *objective*, an *approach* and a *specific subject*. Integrating entrepreneurship education is a way of thinking and acting i.e., a state of mind. The methodological framework, as proposed, allows to paving its path into a broad swathe of school curriculum. It responds to the content and form of integrating entrepreneurship at different stages of school education and its progression thereof (refer table 1).

**Table 1 : Desired Competencies, Performance Indicators for Entrepreneurship Development at Different Stages**

<b>Stage : Elementary Stage (beginning VI through VIII)</b>					
Elementary stage of education (class 1-VIII) in India is a part of compulsory general education. This period of eight years ensure each child the full development of personality, citizenship and lay foundation for employability. Hence, the gradual inclusion of vocationally oriented skills as a part of exposure to ‘work’ would be an important aspect of an inclusive curriculum.					
<b>Objective</b>					
Assuming the responsibility for their own learning (exploration/experiential and participatory) for future development.					
A positive, responsible attitude towards learning and demonstrate it in their behaviour.					
Basic understanding of ‘work’(dignity of labour).					
Development of basic life skills.					
<b>S.No.</b>	<b>% age</b>	<b>Desired Competency</b>	<b>Attribute Development</b>	<b>Performance Indicators</b>	<b>Specific initiatives: Actions</b>
	15%	Becoming Enterprising	What Do Entrepreneurs Do ?	P1 Role of Entrepreneur in society P2 Taking Initiative: An important dimension of entrepreneurship development P3 Recall a list and types of occupations and profession P4 Wage employment <i>versus</i> self employment P5 Complete suggested activities	Integration of the entrepreneurial activities into existing curriculum of languages (narratives/stories), environmental studies and mathematics.  Designing charts/flyers and posters. Business games/role plays4. Aiming for the development of more openness towards the society in schools i.e., inviting artistic community.

**Stage: Secondary Stage (IX-X)**

Secondary education is a period of intense physical change and formation of identity. The ability for abstract reasoning and logical thinking come forward, allowing the possibility for deep engagement both with understanding and generating knowledge. They also discover their own interests and aptitudes for meaningful work related knowledge and skills they wish to pursue later. The process has to be strengthened and concretized instead of loading them with information, generate curiosity and enhance awareness with understanding.

**Objective:** Attitude building: understanding the role of entrepreneur in the society.  
 Business related competencies: basic market principles, business language, price etc.  
 Personality related competencies: taking initiative, being creative, assuming responsibility, experimenting and exploring.

S.No.	% age	Desired Competency	Attribute Development	Performance Indicators	Specific initiatives: Actions
	50%	Looking for available opportunities	How Entrepreneurs Think?	P1 Linking opportunity to hobby/skills P2 Locate Market Gap P3 Develop business idea into a business concept P4 Design poster/flyer for the business idea P5 Converse in business language P6 Complete suggested activities	Setting up 'mini' school enterprises, entrepreneurship clubs, conducting class surveys for knowing choices and preferences for buying and selling. Theme events such as 'feature days', sports, exhibition of self made art work, science projects for inculcating entrepreneurial attitude and organising skills. attitude building and countering initial prejudices. Education and training of teachers and other stakeholders.

**Stage: Higher Secondary Stage (XI-XII)**

After ten years of general education, the higher secondary stage assumes great significance as students for the first time move towards diversification. They start developing their own thinking as independence of mind. The interests and aptitudes begin to crystallize and stabilize which have a potential to shape the future occupational possibilities. A sense of belongingness to the society and the country at large ought to be nurtured to avoid feeling of rootlessness and alienation from the society. The students at the higher secondary stage must be fully equipped with the knowledge, skills, attitude and entrepreneurship proficiencies so that they lead a quality life.

- Objective:**
- Acquire professional, vocational and entrepreneurial competencies
  - Development of entrepreneurial attitude and spirit for entrepreneurship development.
  - Inculcate economic reasoning, understanding themes, issues and realities.
  - Learn to set up business.

S.No.	%	age	Desired Competency	Attribute Development	Performance Indicators	Specific initiatives: Actions
			How Entrepreneurs Decide?	Developing Business Skills	P1 Assessing identified opportunity Take selling decisions  P2 Demonstrate the ability to run a small business:  P3 Complete suggested activity(ies)	Entrepreneurship as a core module. School based enterprise and projects Making projects and events happen and appreciable by junior classes. Interaction with business mentors and community. Education and training of teachers and other stakeholders.



## Strategies

### Home/School/Community Partnerships

Links with the home and the community are important at all levels of schooling. A strong body of research shows that when parents and the community support the work of the school and are involved in its activities, students make greater progress. However, effectiveness requires more than simply establishing links with the home. What is needed is comprehensive and permanent programmes of partnerships with families and communities. The way schools care about children is reflected in the way schools care about children's families. If educators view children as *students*, they are likely to see families as separate from school. That is, the family is expected to do its job and leave the education of children to the school. If educators view the students as *young people*, they are likely to see the family and community as partners with the school in the children's education and development. There are many reasons for developing school, family and community partnerships. They can improve school programmes and school climate, provide family support and services, increase parent's skills and leadership, connect families with others in then school and in the community and help teachers with their work. However, the main reason to create such partnership is to help students succeed in school and in later life. When parents, teachers and students view on another as partners in education, a caring community forms around students as becomes one that supports learning. Thus, schools have to go into the wider community for forge new links to enable them to act as classroom helpers (refer Figure 1).

The community resources in a classroom can be used in three ways: firstly, by bringing the resources in the classroom; secondly, by bringing the resourceful persons and thirdly, by making special arrangements in the form of educational trips, journeys, field trips etc. Use of community resources as a method of developing work competencies serves the following purposes:

- a. Create teaching situations for cultivating observation powers, keenness to learn, developing a power of discovery to encourage children to be conscious of their environment and benefit from what they see.
- b. As a means to arouse interest in industrial processes.
- c. Supplementing classroom instruction.
- d. Verifying previous information, classroom discussion and drawing conclusions.

With the establishment of resource support, the schools can become potential resource centers where teachers could meet, interact, provide material and manpower resources for school improvement programmes and quality education.

## **Figure 1: People's Knowledge and a School at the Hill Top**

### Exemplar lesson I

Walmikinagar in Patan Talika, District Satara (Maharashtra) is a cluster of 10-12 hamlets at the top of the plateau in remote Sahyadri Hills. In 1997, the village planned to establish a school from V-X with people's support. The local farmers and shepherds (including women) became its 'Honourable Teachers'. When a non-literate entered the school for the first time, everyone mocked at him: What can this person teach us when he himself does not know to write or read even his own name? Later he was introduced as a person who can draw parallel lines along the length of a one hectare plot with the help of his bullocks. The farmer began by talking about the functions of bullock cart part. Then moved on to seasons, vegetation and soils. He taught 150 new words regarding farming and referred to 14 principles of physics. Each principle was accompanied by a practical demonstration. At the end of the session, the teachers agreed that now they understood real physics. Another 'Honourable Teacher' – a shepherd, asked the children to accompany him to the jungle. He started showing and explaining the names, characters and uses of various plants. Soon every child in the school was able to identify more than 100 plant species. Next year, when a tour of the college students of the Botany Department visited Walmikinagar, the school children could guide them about the local flora and the medicinal uses of the plants. These children are now preparing Biodiversity register with the help of the non-literate 'Honourable Teachers'.

### Exemplar lesson II

## **Artisans Formers as "Honourable Teacher"**

Karad is a municipal town in Satara District (Maharashtra) in India where 21 schools are run by the municipality and 10 schools by private bodies. Only slum dwellers, farm labourers and other poor people send their children to municipal schools. A programme for bringing real life experiences into the curriculum was discussed in a joint meeting of teachers and parents for improving the quality of education. The parents and community were appealed to participate in the teaching at the school. A carpenter called Seetaram was the first one to come forward. He came to the school with his tool box and some wooden blocks. The Headmaster introduced Seetaram as an 'Honourable Technical Teacher' and presented him with a bouquet of flowers. No artisan or skilled worker had been facilitated in such a manner by the school ever before. Seetaram started introducing his tools one by one with their names and elaborating upon its functions. He took his big compass and meticulously drew a circle on the blackboard, followed by a triangle and rectangle. Each figure was evidence of his sense of geometry. Like an experienced teacher, he then encouraged children to use his tools to draw the figures themselves. He went on to demonstrate how to cut and join pieces of wood in various shapes and sizes, explaining the attributes of each joint. Gone was the distance that separated the educated teachers from the non-literate Seetaram. After the session was over, a rapid oral test was conducted. To a surprise, every child could explain the difference between a square and a rectangle, identifying and drawing various geometrical figures. Almost 90% of the children responded correctly. Normally, speaking, merely 2-3 % children would respond after a geometry lesson and most of them to only recall the sentences as dictated by the teachers. Nor would the children be able to translate the teacher's instruction into action. But in Seetaram's class it had all happen This experiment broke the ice. One by one, a blacksmith, a tailor, a painter and a bicycle repairer visited the schools. Along with simple mathematics (including measurements), some principles of physics and chemistry, drawing and painting were part of learning that took place. The impact of this was twofold. One, the slum children started addressing the local artisans as 'guruji' thereby a higher status than before. Two, the artisans started taking interest in children's education; they would inquire about their attending classes and the progress of their studies. The parents too developed a sense of affinity for the school. Education suddenly a live issue in the slums!

**Focus Group Paper on 'Work and Education', NCF-2005, NCERT**

## **Setting up Entrepreneurship Clubs**

Entrepreneurship club is a simple term. Given the will and the opportunities, an ambitious programme for various categories of students can be developed. In fact, it can become a nucleus of general education and link the classroom practices with entrepreneurial behaviour and with community. The various outcomes of advancing entrepreneurship education in relation to vocational ambition and aspiration mentioned in this paper can be achieved through formal and informal activities of the club. Our dilemma is not to hair split on the aims and objectives of entrepreneurship clubs. It is to translate these into action. The general aims of entrepreneurship club can be enumerated as follows:

1. Cultivation of an awareness of entrepreneurial behaviours.
2. Familiarizing students with entrepreneurship temper.
3. Encouragement of critical thinking.
4. Provision of outlets for enterprising talents.
5. Access to career information.

## **Managing the System**

Teacher's role in the development and implementation of the curriculum is vital. All changes and developments to take place in school curriculum, therefore, have necessarily to percolate to the teacher education programmes.

## **Professional Support for Teacher Education System**

Teachers are the key agent for the success of any exercise for curriculum reform in school education. It is more so important for entrepreneurship education because it is a relatively new concept that demand teachers go beyond the boundaries of their traditional subject specialization. Although creative ideas for reforming education come from many sources, only teachers can provide the insights that emerge from intensive, direct experience in the classroom itself. They bring to the task of reform- knowledge of students, and craft the school culture. Those others cannot do. Moreover, the reform cannot be imposed on teachers from top down or the outside in. If teachers are not convinced of the merit of proposed changes, they are unlikely to implement them energetically. If they do not understand fully what is called for or have not been sufficiently well prepared to introduce new content and ways of teaching, reform measures will founder. In either case, the more teachers share in shaping reform measures and the more they provide in implementing agreed upon changes, the greater the probability that they will be able to make those improvements stick.

The development of the desired attitudes, skills and values require innovative planning and execution of teaching strategies, which demand special skills on the part of teachers. Seeing the specificity of the topic and the fact that this topic is going to be introduced in school curricula in an integrated fashion, it is essential to empower teachers with desired skills and competencies. Next to the professional teaching competencies and experiences, which already exist, *core personal skills and pedagogical competencies* as well as *certain skills/experiences* needs to be properly planned for both pre-service and in-service teacher preparation programmes.

There is a proverb: 'money makes the mere go'. She cannot go far in the absence of maximally trained and educated manpower. Children everywhere must learn to build their own small hills of learning. They should climb them frequently so that their sights get raised high. The role of the teacher also demands new orientation to suit the modern temper and times. It is to see that almost all students in one way or other construct their own meaning while acquiring knowledge.

### **Concluding statement**

The above discussion can now be expressed in the form of the following strategy points. These strategy points are in consonance with the recommendations of World Economic Forum report (2009), which focuses on entrepreneurship as a tool for transforming the education system globally.

1. The scope and focus of entrepreneurship development must extend itself beyond self employment potentialities only. Its model must accommodate the aspirations of the entire population. This alone would lead to a better educational transformation and provide avenues of development of human potentialities. Hence, the need for sound work experience in the process of education interspersed throughout the ten years of schooling. Viewed in totality, the alone would lead to development of work force for a variety of activities.
2. Throughout the student's educational progress, they should be offered an unbroken chain of educational opportunities which, seen as a whole, will strengthen their entrepreneurial competencies. In fact, all schools could consider the following possibilities for their children:
  - a. Participation in local economic activities both production and services sectors within the school or the community-based training sites for hands-on-experience and development of entrepreneurship.
  - b. A generic preparation centering around basic human needs such as water, food, energy, health and maintenance, role of technology and informatics, skill of self learning, community learning and decision-making.
  - c. With a sound background of work experience, participation in specialised courses from the above areas of human needs plus added areas of value addition to the primary products, watershed management, agro-services and agribusiness, handicrafts and others.
  - d. Participation in long-term projects of development as an apprentice such as literacy drive, health campaigns, infrastructure development, agro-horticulture and animal production, socio agro forestry, care of old and pre-schoolers and the like ; and
  - e. Teacher preparation for the development-oriented education in terms of content, pedagogy and managerial competence.
3. Teachers are to build up their skills through involvement in development work, practical experiences, research etc. They must also be provided with ongoing training in innovative teaching and interactive learning methods.

4. The 'culture' in the schools should provide room for expression of initiative and the willingness and ability to assess and take risks – as well as acceptance of the fact that not all experiments will be successful.
5. There must be a room for new ideas, initiatives and collaborations. The education system must become more open to the outside world. The partnership between educational institutions and business community represents an essential link in developing the entrepreneurial culture in the schools.
6. For generating learning and awareness about the business community, students should also be given opportunities for taking part in school enterprises, business games or other similar opportunities for stimulating business operation within education programme.

The school curriculum should aim for realising the pedagogic potential of 'work' as a medium in knowledge acquisition, developing values and multiple-skill formation. As the child matures, there is a need for the curriculum to recognise the child's need to be prepared for the world of work. And work centered pedagogy can be pursued with increasing complexity while always being enriched with the required flexibility and contextuality (National Curriculum Framework ,2005, National Curriculum Framework for School Education, 2000). However, schools at present are not geared for entrepreneurship-cum-social accountability as a part of curriculum in terms of infrastructure or learning materials. It is in fact an interdisciplinary activity. Therefore, integrating entrepreneurship into the school curriculum would require a substantial amount of pedagogical understanding of how it would be integrated with learning and the mechanisms for assessment and evaluation.

On the closing account, there is a case to be made that if we are to provide for a better future for our country, if we are to provide for a better future for our children, then we must undertake the task of integrating entrepreneurship into the fabric of their lives. *Journey on a creative road will be a risky business. Care and caution must be our guide. 'Being enterprising' is dynamic, contextual, procedural and dialectic. It disciplines our imagination and reorients our vision. Knowledge of facts is, of course, will be necessary but clearly facts alone will not be sufficient. Education has to be tampered with 'desire to know' and the follow-up of the hypothesized ideas to their logical ends.*

To quote, one of the sages of the TALMUD (the fundamental code of the Jewish Civil and Cannon Law) taught nearly 2000 years ago that GOD could have created a plant that would grow loaves of bread. Instead He created wheat for us to mill and bake into bread. Why? So that we could be His partners in completing the work of creation. Education is similar. Books and lessons have to create something edible and tangible to enable the child to develop and give it a sense of participation in the process of growing up. If we are to produce enlightened citizens who can take the country forward to prosperity and welfare, reforms in the educational field have to be carried out.

The paper shows a way but is not a way. It tells that surplus luggage we carry on our heads and backs needs to be dropped immediately for spectacular results. While doing so, let each of us learn: 'How to think entrepreneurially?' for which there is no prescribed curriculum. The whole argument may now be concluded in the words of Mahatma Gandhi during his discussion with teacher trainees in 1939:

*Our education has got to be revolutionised. The brain must be educated through the hand. If I were a poet, I could write poetry on the possibilities of the five fingers. Why should you think that the mind is everything and the hands and feet nothing? Those who do not train their hands, who go through the ordinary rut of education, lack 'music' in their life. All their faculties are not trained. Mere book knowledge does not interest the child so as to hold his attention fully. The brain gets weary of mere words and the child's mind begins to wander. The hands does the things it ought not to do, the eyes see the things it ought not to see, the ear hears the things it ought not to do, and they do not do, see or hear, respectively what they ought to. They are not taught to make the right choice and so their education often proves their ruin. An education which does not teach us to discriminate between good and bad, to assimilate the one and eschew the other is a misnomer* (The collected works of Mahatma Gandhi, Vol. 68: pp 372-73).

So, the child is not a roll number for he has at his disposal the armament: an individual head, heart and hand for resolving more dilemmas as they arise during the course of his life. What we can do is to render all those values a development context within our formal system of education, the influence of home, the surrounding community, of course, not excluded in the first instance. A complete overhaul of the education system and not just cosmetic touches is the key to transformation into a dynamic, responsive and fructifying process of teaching and learning. Only then, would it celebrate childhood and respect the innocence, curiosity and creativity of every child. The infinite treasure within every learner is to be discovered and nurtured to spread its bounty all around.

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