



TEACHER EFFICACY AND THE ACADEMIC ACHIEVEMENT OF STUDENTS WITH COCHLEAR IMPLANT IN INCLUSIVE SCHOOL

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ABSTRACT

The present study was exploratory in nature. The study conducted on 122 (64 male, 58 female) cochlear implanted students of standard (V) – (VIII) studying in inclusive school. The academic achievement student analysis through 43 inclusive school teacher's efficacy. The findings revealed that the teachers of inclusive setup, unable to engage cochlear implanted students in classroom because of lack of training. But the strategies planning of inclusive school teachers positively affect academic achievement of cochlear implanted students. The teachers of inclusive setup are somehow effectively manage the classroom. Finally the researcher recommends more training for inclusive teachers by efficient resources to manage, engage cochlear implanted students and enhance their academic achievement.

Key Terms: (Inclusive School, Teacher Efficacy, Cochlear Implant, Academic Achievement)

INTRODUCTION

Education is the backbone of every country. So we need to improve the quality of education. There are many factors like parental involvement in child's education, their socio-economic condition, their literacy level, their awareness towards their child's disability that are related to the academic achievement of the students with cochlear implant but the teacher is one of the most important factors that is directly related to the academic achievement of the students with hearing impairment.

A teacher can improve the quality of education. Quality of education means they can impart education to children in a most effective way. They may be able to improve student's performance by more dynamic student engagement, better classroom management and more effective instructional strategies. An effective teacher can also reach unmotivated children and improve the academic achievement of these students.

In integrated/inclusive schools they have both normally developing children and special needs children. Teachers are generally trained only to handle normally developing children and not aware about the child with special needs.

In special schools the teacher student ratio is 1:5 or 1:8. The ratio of teacher to student is much less than that of the regular classroom. Every teacher can reach each and every child easily. In other words, the lower teacher student ratio enables student engagement, adequate opportunity for teacher to revise his/her instructional strategies and use appropriate classroom management techniques. Research suggests that the majority of children enrolled in schools have average intelligence, however the academic achievement of these children is seen to be significantly below that of their hearing peers.

As has been said earlier, teacher variables are directly related to the academic achievement of the children. Given this is important to study the relationship/role of teacher efficacy on academic achievement.

NEED AND PURPOSE OF THE STUDY

Teacher's efficacy is very important for the academic achievement of the students with cochlear implant. As earlier discussed the quality of education is directly related to the quality of teacher. Teacher behaviors influence student achievement. There is large body of research pertaining to teacher efficacy and classroom performance with reference to both the typical child and the child with cochlear implant in the western context but there is less research in the Indian context especially with reference to teacher efficacy and the academic achievement of students with cochlear implant. Hence, there is a need to study teacher's perception of his/her efficacy and to gauge its relationship with the academic achievement of their students with cochlear implant.

OBJECTIVES

1. To establish the relationship between teacher self perception in terms of efficacy in student engagement and academic achievement of students with cochlear implant in terms of their performance in (a) Mathematics (b) Science (c) Social Science (d) Language.
2. To establish the relationship between teacher self perception in terms of efficacy in instructional strategies and academic achievement of students with cochlear implant in terms of their performance in (a) Mathematics (b) Science (c) Social Science (d) Language.

3. To establish the relationship between teacher self perception in terms of efficacy in classroom management and academic achievement of students with cochlear implant in terms of their performance in (a) Mathematics (b) Science (c) Social Science (d) Language.

HYPOTHESES

1. There is a significant relationship between student engagement and academic achievement of student with cochlear implant in terms of their performance in (a) Mathematics (b) Science (c) Social-Science (d) Language.
2. There is a significant relationship between instructional strategies and academic achievement of student with cochlear implant in terms of their performance in (a) Mathematics (b) Science (c) Social-Science (d) Language.
3. There is a significant relationship between classroom management and academic achievement of student with cochlear implant in terms of their performance in (a) Mathematics (b) Science (c) Social-Science (d) Language.

LIMITATION OF THE STUDY

- (1) The study include only inclusive school
- (2) Only cochlear implanted students are taken under consideration.
- (3) Only limited districts of U.P. are taken under consideration

METHODOLOGY

TYPE OF RESEARCH: Exploratory research

SAMPLE

- (1) **Type of Sampling:** Purposive Sampling
- (2) **Sample Size:** The total sample comprised of two groups: 43 inclusive school teacher and 122 students with cochlear implant.

(3) Selection of Sample:

3.1 Selection of School: In present study the researcher selected the inclusive schools where cochlear implanted students are enrolled from some districts Uttar Pradesh.

3.2 Subject Selection: For the present study the researcher divided the subjects into two groups:

- **Group A:** inclusive school teachers (43)
- **Group B:** Students with cochlear implant (122), selected.

TOOL USED IN THE STUDY: The researcher developed two questionnaires as per the requirement of the present study.

DATA COLLECTION AND DATA ANALYSIS

Data collection procedure: After selecting the sample, the researcher check the academic achievement of cochlear implanted students and distribute questionnaire to teachers, to collect information regarding student engagement in class, strategy of teaching and classroom management.

RESULT AND DISCUSSION

The findings regarding teacher efficacy and the academic achievement of the students with cochlear implant are discussed below.

Table 4.1: Distribution of inclusive school teachers

N=43

Gender	5 th Std		6 th Std		7 th Std		8 th Std		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Male	1	6	2	25	2	22	2	22	7	16
Female	16	94	6	75	7	78	7	78	36	84
Total	17	39.5	8	18.6	9	20.9	9	20.9	4.3	100

Table 4.1 indicates the distribution of the 43 teachers from inclusive schools. There were 17 from 5th Std. i.e. 39.5% of the total sample of teachers; 8 from 6th Std. i.e. 18.6% and 9 each from 7th and 8th Std i.e. 20.9%. This table also

indicates that there were only 7 male teachers, that is, 16% of the whole sample of 43 teachers while 84% are female teachers. The difference in number of male and female teachers is not surprising. Teaching, particularly teaching young children, is traditionally regarded as a female domain. Children are widely believed to be more responsive to the nurturing behaviours typically associated with females. Furthermore, males tend to eschew teaching as a Profession as it is not as well paid as many other professions.

Table 4.2: Distribution of the inclusive school teachers according to years of experience

N=43

Scoring	Years of Experience				
	1-5 years	6-12 years	13-21 years	22 years & above	Total
No.	5	11	15	12	43
(%)	11.63	25.58	34.88	27.91	100

Table 4.2: indicates the years of teaching experience, i.e, the teachers who have 1-5 years of teaching experience (11.63%) those who have 6-12 years (25.58%), 13-21 years (34.88%) and 22 years and above of teaching experience (27.91%). The minimum teaching experience is 18 months and the maximum is 30 years. The mean years of teaching experience is 16 years.

Table 4.3: Distribution of students with cochlear implant

N=122

Gender	5 th Std		6 th Std		7 th Std		8 th Std		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Male	25	57	14	52	15	52	10	45	64	52
Female	19	43	13	48	14	48	12	55	58	48
Total	44	36	27	22	29	24	22	18	122	100

Table 4.3 : indicates the distribution of the 122 students with cochlear implant. There are 44 (36%) from 5th Std, 27 (22%) from 6th Std, 29 (24%) from 7th Std and 22 (18%) from 8th Std. This table also indicate that 52% (64) of the total sample of students are male and 48% (58) are female students.

Table 4.4: Descriptive statistics of teachers on three efficacy domains

Efficacy Areas	N	Mean	Std. dev.	Median	Min	Max
Student Engagement in Classroom	43	64.84	5.09	64.00	46.00	72.00
Instructional Strategy	43	65.74	7.47	67.00	28.00	72.00
Classroom	43	65.35	5.93	67.00	48.00	72.00

As can be seen from Table 4.4, the difference in the three means is quite small compared to their standard deviation (5.09 for student engagement in classroom, 7.47 for instructional strategy and 5.93 for Classroom management) suggesting that there will be a good overlap between the distributions of all the efficacies.

Table 4.5: Percentage of teachers in each Level of Efficacy on three domains

Area	% of Teachers in Efficacy Level			
	Low	Average	High	Total
Student Engagement in Classroom	20.93(<63)*	58.14 (63-68)	20.93 (>68)	100.00
Instructional Strategy	20.93(<64)	53.49 (64-70)	25.58 (>70)	100.00
Classroom	18.60 (<62)	53.49 (62-70)	27.91 (>70)	100.00

*Figures inside parenthesis show cut-off scores

Table 4.5 indicates that a higher percentage (79.07%) of teachers have rated themselves average to above average (>63) on student engagement in the classroom with the only 20.93% rating themselves less than 63 (herein described as low). Likewise, 79.07% teachers have rated themselves average to above average (>64) on instructional strategies with the only 20.93% rating themselves below 64 (herein described as low) and almost the same percentage of teachers, i.e., 81.4% have rated themselves average to above average (>62) on classroom management with only 18.60% rating themselves below 62 (herein described as low).

Table 4.6: Results of Friedman Test for Threes Efficacies

Variables	N	Friedman Test Results			
		Chi-Square	df	p-value	Significant
N-Ca (mm)	43	8.15	2	<.017	.05 levels

From the results presented in **Table 4.6** it can be concluded that, in the case of the three efficacies of teachers the Friedman statistic is significant (Chi-square) = 8.15, $p < .017$). This indicates that at least one of the three efficacy distributions differ significantly from the remaining distributions.

To identify which pairs differ significantly with respect to their distribution we apply Wilcoxon Signed rank test.

Table : 4.7: Results of comparisons for three pairs of efficacies of teachers

Pairs of Efficacies Compared	Wilcoxon Signed Ranks Result		
	N	z-value	p-value
Instructional Strategy & Student Engagement	43	-1.93	.054
Classroom Management & Student Engagement	43	-1.47	.143
Classroom Management & Instructional Strategy	43	-.69	.492

Result in Table 4.7 indicates, that there are no significant differences in the distributions of three pairs of efficacies (all p-values are greater than .05). Thus the differences observed are only due to chance.

So, it can say that all the three efficacies of teachers under this study are similar in nature.

Table 4.8: Descriptive statistics for Achievements of Students on Four Subjects

Subject	N	Mean	Std. Dev.	Median	Min	Max
Math	40	46.75	17.41	47.00	14.00	80.00
Science	40	47.43	18.81	48.13	11.00	83.00
Social Sciences	40	49.21	18.14	46.63	15.00	84.00
Language	40	51.19	19.19	46.00	22.00	84.25

Results in Table 4.8 surprisingly reveal that students have scored highest on language. The group has the lowest mean score of 46.75 in Mathematics.

Table 4.9 Percentage of Students in Each Level of Achievement on Four Subjects

Subject	% of Students with Achievement			
	Low	Average	High	Total
Math	24.39 (<30)*	43.9 (30-57)	31.71 (>57)	100.00
Science	21.43 (<31)	52.38 (31-63)	26.19 (>63)	100.00
Social Sciences	23.08(<35)	53.85 (35-62)	23.08 (>62)	100.00
Language	23.26 (<36)	51.16 (36-70)	25.58 (>70)	100.00

*Figures inside parenthesis show cut-off scores.

Table 4.9 indicates that the higher percentage (43.9%) of students achieved average (30-57) marks in mathematics, 31.71% achieved marks greater than 57% and 24.39% have below than 30% (herein describe as low). Likewise, 52.38% achieved average (31-63) marks in science, 26.19% achieved marks more than 63% and 21.43% have below than 31. In social science it is observed that 53.85% of students received marks between (35-62) while an equal percentage i.e 23.08 received marks that both low (<35) and high (>62). Whereas 51.16% of students achieved average (36-70) marks in language, 25.58% achieved marks greater than 70 and 23.26% achieved below 36.

The skewness ratio for all the distributions is very small. However, since these scores are to be correlated with teacher's respective efficacy scores, which have serious skewness, Spearman's rho is the most appropriate non-parametric test one can use.

Table 4.10: Relationship between teacher efficacy and academic achievement of students

		Math Score	Science Score	Social Science Score	Langu age Total
Student Engagement	Correlation Coefficient	.252	.179	.226	.219
	Sig. (2 tailed)	.103	.251	.162	.157
	N	43	43	40	43
Instructional Strategy	Correlation Coefficient	.332*	.206	.0340*	.433**
	Sig. (2 tailed)	.030	.186	.032	.004
	N	43	43	40	43
Classroom Management	Correlation Coefficient	.185	.218	.360*	.283
	Sig. (2 tailed)	.235	.161	.023	.066
	N	43	43	40	43

**** Correlation is significant at the 0.01 level (2-tailed).**

*** Correlation is significant at the 0.05 level (2-tailed).**

From Table 4.10 it can be concluded that:

- (1) Teachers' efficacy on student engagement in the classroom is independent of students' achievement on four subjects selected under this study. No correlation is significant. All p-values are $> .05$. In other words, it can be said that teacher efficacy in terms of student engagement is not significantly related to the academic achievement of the student with cochlear implant. Thus, Hypothesis 1, i.e., there is a significant relationship between student engagement and academic achievement of students with cochlear implant in terms of their performance in (a) mathematics (b) science (c) social-science (d) language is rejected.

Academic achievement was established from the half yearly examination marks in mathematics, science, social-science and language. The distribution of 122 students with cochlear implant tells that the maximum number of students 44 (36%) of the whole sample are from the 5th standard and 27 (22%) students are from 6th standard, 29 (24%) students from 7th standard and 22 (18%) student from 8th standard. A slightly higher percentage of students i.e. 52% are male whereas only 48% are females.

Findings of the Study:

The obtained data were analyzed to study teacher efficacy and the academic achievement of the students with cochlear implant

1. The result of Spearman's correlation analysis highlights that teacher efficacy in term of student engagement is not significantly related to the academic achievement of students with cochlear implant. Thus, the Hypothesis 1 i.e. there is a significant relationship between student engagement and teacher efficacy and academic achievement of student with cochlear implant in terms of their performance in mathematics, science, social-science and language is rejected. This finding could be due to various factors including late identification and intervention, differences in amplification devices; delays in speech and language; socio-economic conditions; lack of parental support; lack of motivation etc.
2. The second finding reveals that teacher efficacy in terms of instructional strategies is related to student's academic achievement in mathematics, social science and language but not to science. Thus, Hypothesis 2, i.e, there is a significant relationship between instructional strategies and academic achievement of student with cochlear implant in terms of their performance in mathematics, science, social-science, language is partially accepted.
3. The third finding reveals that the teacher efficacy in classroom management is related to only social science. Thus, Hypothesis 3, i.e, there is a significant relationship between classroom management and academic achievement of student with cochlear implant in terms of their performance in mathematics, science, social-science and language is only partially accepted.
4. Interestingly, this study also reveals that science is the only subject not significantly related to any of the efficacies of the teachers. The reason behind this might be a lack of practical work, absence of Teaching Learning Material (T.L.M) and lack of adequate subject knowledge. This highlights the need for practical work with students, sufficient T.L.M. and, if possible, for schools to appoint a separate teacher for science.

Unexpectedly, the study also reveals that the highest mark attained by the students was in language. They received the lowest marks in mathematics. The reason behind this might be the greater difficulty level of mathematics that requires much more concentration on the part of the students and much more effort on the part of the teacher as well.

REFERENCES

- Ahmad, A. & Sahak, R. (2009). Teacher Student Attachment and Teacher
- Ashton, P. T., & Webb, R. B. (Eds.). (1986). Making a difference: Teacher's Sense of Efficacy & Student Achievement. New York: Longman on 01/04/2012
- Chambers dictionary is retrieved from <http://www.chambers.co.uk/dictionaries/the-chambers-biographical-dictionary.php> on 12/02/2012
- Eddy, C. & Donald, E. B. (2010). Teacher Efficacy as A Multigroup Model Using Latent Class Analysis. Retrieved from www.hindawi.com/journals/edu/2011/149530 on 13/12/2011
- Froyen & Iverson, (1999). Definition of content management. p.128, Retrieved from — http://www.intime.uni.edu/_model/teacher/content.html on 22/08/2011
- Gibson, S., & Dembo, M. (1984). Teacher Efficacy: A construct validation. *Journal of educational psychology*, 76, 569-582 on 01/04/2012
- Hoy, A. W. (2000). Changes in Teacher Efficacy During the Early Years Of Teaching. Retrieved from <http://wps.ablongman.com/wps/media/objects/290/297451/changes%20in%20efficacy.pdf>. on 17/11/2011
- Kuh, (2001). Definition of student engagement. Retrieved from <http://beerc.wordpress.com/2010/03/09/online-student-engagement/> on 10/10/2011 Labone & Elizabeth (2004). Teacher efficacy: maturing the construct through research in alternative paradigms. Dissertation Retrieved from http://www.eric.ed.gov/ERICWebPortal/search/detailmini.jsp?_nfpb=true&&ERICExtSearchSearchValue0=EJ731234&ERICExtSearchSearchType_0=no&accno=EJ731234 on 12/01/2012
- Lin H., Gorrell J. (2000). Exploratory analysis of pre-service teacher efficacy in Taiwan. Retrieved from <http://112.137.138.6/jspui/bitstream/123456789/711/1/TeacherEducation%2083.pdf> on 04/10/2011
- Meijer, C. J., & Foster, S. F. (1998). The effect of teacher self-efficacy on referral chance. *The journal of special education*, 22, 378-385 on 01/04/2012
- Pandya S.R. (2010) educational research: Systematic random sampling New Delhi, Nangia S.B.
- Rivkin, S. G., Hanushek E. A., & Kain, J. F. (2005). Teachers, Schools and Academic Achievement. Retrieved from hanushek.Stanford.edu/Publications/teachers-schools-and-academic-achievement._ on 23/09/2011