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Early Childhood Special Education Program at the Outcome Phase: An Evaluation from Stake's Countenance Model Perspective

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Abstract

The main purpose of this quantitative enquiry was to evaluate the performance of children with deafness in class one who had attended an Early Childhood Special Education (ECSE) program for two years in Government Special Education Schools for Hearing Impaired Children (GSESHIC) in Punjab. The third phase of Robert Stake's Countenance Model was taken for the evaluation purpose. The province of the Punjab was divided into four zones. A sample of 37 (50%) children with deafness (Zone I= 12 children; Zone II= 12 children; Zone III=7 children; Zone IV=6children) who had been promoted to class one were randomly selected. Achievement tests on reading (Urdu & English), writing (Urdu & English), mathematics, speech and speech reading (Urdu & English) were prepared on the basis of syllabus of K.G.II, and following the pattern of sample question papers of four schools for hearing impaired children (one school from each zone). The tests were validated by a panel of five experts in the deaf field. The tests were administered in schools after seeking prior consent of the school heads. The test results were analyzed using ANOVA and post hoc test of multiple comparisons. A significant difference was found in the mean scores of reading recognition test (Urdu & English), speech reading test (Urdu & English), and speech test in the GDDHS in Zone IV from those in Zone I, Zone II, and Zone III. Similarly, the results of ANOVA and post hoc comparisons showed a significant difference in the mean scores of writing test (Urdu), writing test (English), and Mathematics test in the GSESHIC in Zone IV from those in the other three zones. Conclusions were drawn and recommendations to Punjab Special Education Department were made for the improvement of (ECSE) program for young children with deafness.

Keywords: Evaluation, early childhood special education, outcome, stake's model

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Introduction and Review of Literature

A child's life is significantly influenced by his early years' experiences with relation to attainment of knowledge about his environment, connection with his family and community, and maturity of cognitive abilities and language (Abidi, 2015; Nutbrown, 2011; Mori & Olive, 1980). If a young child develops spoken language skills appropriate to his age, he will be able to get admitted in a preschool setting and can take part in all school activities engaging in significant social relations with instructors and peers. Research indicates that children who do not receive enough language input in the early years of their lives cannot show better performance in academics and language in the coming years (Abidi, 2015; Nathan, Goulandris, & Snowling, 2004).

Deafness restricts the developmental process for acquiring language in young children. When the deafness in children is of a profound degree and of a permanent type, it causes obstacles in the acquisition of language, speech, and communication and results in lapses in social and cognitive development. It, consequently, affects academic progress including literacy skills in children (Andleeb, 2008; Hart & Risley, 1995).

When deafness is identified at an early age, and early intervention is started effectively, it increases the chances of speech, language and communication development according to the pattern of development and time duration for children without deafness (Anjum & Sadia, 2011; Ansari & Mushtaq, 2009).

Early Childhood Special Education stands for free of cost, appropriate, specifically organized teaching to meet the disability specific needs of preschool age children between three to five years. These children are imparted instruction at their homes, in hospitals, organizations, schools made for special children, day care centres, and preschool settings (IDEIA, 2006; Oregon Department of Education, 2013).

Early Childhood Special Education (ECSE) programs are very important. Their quality depends on paying attention to classroom performance and communication, environment of classrooms, distinctiveness of teaching staff, their professional development, administrative and support facilities, and parental involvement (Buysee & Hollingsworth, 2009; National Association for the Education of Young Children, 2009). Exemplary ECSE programs should be standardized, integrated, peer and family related, all-inclusive, modifiable, and outcome based. Furthermore, the best services should be conveyed to deaf children and their families through these programs. Additionally, the teaching learning process should be emphasized and the development of a universally recognized and adaptable curriculum framework should be ensured.

Taking into consideration the specific nature of the problem under investigation, there was a need to design a suitable evaluation study with a proper reporting format. Keeping in view, the nature, major purpose and objectives of the study, we selected Robert Stake's Countenance Model of evaluation for this study. Stake's model puts emphasis on similarity between what was anticipated to take place and what was really observed to take place before, during, and after teaching. According to Stake, complete description and judgement of the program are two major operations, or countenances of an evaluation. The descriptive act stands for what was planned or what was really viewed to happen. The judgemental act means a benchmark which is employed in making judgements or the real judgements (Worthen & Sanders, 1987). His method focuses on the disparities between descriptive and judgemental acts considering their phase in an academic program: antecedent, transaction, and outcome (Popham, 1993). Antecedent is a state which is present before teaching that may be related to outcome. Transactions are consecutive activities or lively encounters forming the procedure of instruction. Outcomes are the end products, both planned and unplanned of the teaching process. An outcome is an advantage gained as a result of supports and services provided for a child and family functioning (Early Childhood Technical Assistance Centre, 2014). Outcomes depend on antecedent conditions and transactions. Being a vertical connection, it is very important for the improvement of the program (Popham, 1993; Stake, 1977).

Objectives of the Study

The study was conducted to achieve the following objectives:

1. To evaluate the performance of children with deafness promoted to class one in reading recognition (Urdu & English) after receiving early childhood special education for two years.
2. To assess the level of children with deafness promoted to class one in writing (Urdu & English) after receiving early childhood special education for two years.
3. To check the performance of children with deafness promoted to class one in mathematics after receiving early childhood special education for two years.
4. To evaluate the achievement of children with deafness promoted to class one in speech after receiving early childhood special education for two years.
5. To assess the achievement level of children with deafness promoted to class one in speech reading (Urdu & English) after receiving early childhood special education for two years.

Questions of the Study

The study was conducted to answer the following questions:

1. What is the performance of children with deafness promoted to class one in reading recognition (Urdu & English) after receiving Early Childhood Special Education?
2. What is the level of children with deafness promoted to class one in writing (Urdu & English) after receiving early childhood special education for two years?
3. What is the achievement level of children with deafness promoted to class one in mathematics after receiving early childhood special education for two years?
4. What is the achievement level of children with deafness promoted to class one in speech after receiving early childhood special education for two years?
5. What is the achievement level of children with deafness promoted to class one in speech reading (Urdu & English) after receiving early childhood special education for two years.

Methodology

The study was quantitative in nature. Robert Stake's Countenance Model was selected to evaluate the performance of children with deafness promoted to class one after receiving early childhood special education for two years in GSESHIC. Stake's model puts emphasis on the similarity between what was anticipated to take place and was really observed to take place before, during, and after teaching. According to Stake, complete description and judgement of the program are two major operations, or countenances of an evaluation. The descriptive act stands for what was planned or what was really viewed to happen. The judgemental act means a benchmark which is employed in making judgements or the real judgements (Worthen & Sanders, 1987). His method focuses on the disparities between descriptive and judgemental acts considering their phase in an academic program: antecedent, transaction, and outcome (Popham, 1993).

Population

The population of study included all 34 Government Special Education Schools for Hearing Impaired Children located in 31 districts of the Punjab province, 6,164 children with deafness enrolled in these schools, and 989 young children with deafness who had got promoted to class one after studying two years in Early Childhood Special Education program.

Sample

The multi- stage sampling technique was used to select a representative sample of schools and children with deafness. At first stage, four schools for hearing impaired children were selected randomly from four districts located in four zones of the Punjab province. At the second stage, 37 (50%) children with deafness (Zone I = 12 children; Zone II = 12 children; Zone III = 7 children; Zone IV = 6 children) who had got promoted to class one after attending the ECSE program for two years were randomly selected for conducting achievement tests on reading, writing, mathematics, speech and speech reading.

Instruments

To measure the achievement of children with deafness after attending a two-year ECSE program, tests in reading recognition (Urdu & English), speech reading, speech, writing (Urdu & English), and mathematics were prepared on the basis of the syllabus of K.G. II, and following the pattern of sample question papers of four deaf schools (one school from each zone) implemented in these schools. The tests were validated by a panel of five experts from the deaf field. Necessary changes were made in tests on the basis of experts' suggestions and comments.

Administration of Tests

After obtaining prior permission of the heads of the selected schools, children with deafness who had got promoted to class I after attending a two- year ECSE Program (K.G. I & K.G. II) were selected. The administration of tests was scheduled with the consultation of the respective school heads and teachers. Parents of children were informed about the pattern and stipulated dates of tests four days before their administration. The completion of tests took approximately five days in each school.

Data Analysis

Analysis of data is presented as follows:

Table 1

ANOVA for difference in mean scores of tests in reading recognition (Urdu & English), speech reading (Urdu & English), and speech

Sources of variation	Sum of Squares	df	Mean Square	F	Sig.
	94.874	3	31.625	10.551	.000
Reading recognition (Urdu)	107.901	36	2.997		
	202.775	39			
	58.976	3	19.659	7.183	.001
Reading recognition (English)	98.524	36	2.737		
	157.500	39			
	91.601	3	30.534	16.462	.000
Speech reading (Urdu)	66.774	36	1.855		
	158.375	39			
	44.446	3	14.815	10.391	.000
Speech reading (English)	51.329	36	1.426		
	95.775	39			
	613.083	3	204.361	14.632	.000
Speech	502.817	36	13.967		
	1115.900	39			

Table 1 depicts that a one-way (between groups) ANOVA was conducted to know the difference in the achievement level of children with deafness in reading recognition (Urdu & English), speech reading (Urdu & English), and speech on the basis of four randomly selected deaf schools in four zones of the Punjab province. The test scores were collected in three skills, i.e. reading recognition (Urdu & English), speech reading (Urdu & English), and speech. Results showed that there was significant difference in test scores of three skills on the basis of zones, i.e., reading recognition (Urdu) ; $F (3, 36) = 10.55$, $p = .000$; reading recognition (English): $F (3, 36) = .7.1$, $p = .001$; speech reading (Urdu): $F (3, 36) = 16.5$, $p = .000$, speech reading (English): $F (3, 36) = .10.4$, $p = .000$ and speech; $F (3, 36) = 14.6$, $p = .000$.

Table 2

Multiple comparisons of reading recognition (Urdu & English), speech reading (Urdu & English), and speech on the basis of four zones

Dependent Variable	(I) zone	(J) zone	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
Reading recognition (Urdu)	1	2	-.083	.707	.999	-1.99	1.82
		3	-.286	.823	.985	-2.50	1.93
		4	-3.778*	.763	.000	-5.83	-1.72
Reading recognition (English)	1	2	.167	.675	.995	-1.65	1.99
		3	.024	.787	1.000	-2.10	2.14
		4	-2.833*	.729	.002	-4.80	-.87
Speech reading (Urdu)	1	2	.417	.556	.876	-1.08	1.91
		3	.107	.648	.998	-1.64	1.85
		4	-3.417*	.601	.000	-5.03	-1.80
Speech reading (English)	1	2	-.083	.487	.998	-1.40	1.23
		3	.107	.568	.998	-1.42	1.64
		4	-2.528*	.527	.000	-3.95	-1.11
Speech	1	2	-1.333	1.526	.818	-5.44	2.78
		3	-1.631	1.777	.796	-6.42	3.16
		4	-10.139*	1.648	.000	-14.58	-5.70

Post-hoc comparisons using the Tukey HSD test indicated that the mean scores of reading recognition of Urdu test in the deaf school in Zone IV (M = 6.78, SD = 1.4) were significantly different from those in Zone I (M = 3, SD = 1.86), Zone II (M = 3.08, SD = 178), and Zone III (M = 3.3, SD = 1.8). The mean scores of English reading recognition test in the deaf school in Zone IV (M = 5.09, SD = 1.87) were significantly different from those in Zone I (M = 2.17, SD = 1.7), Zone II (M = 2, SD = 1.54), and Zone III (M = 2.14, SD = 1.46). The mean scores of speech reading Urdu test in Zone IV (M = 5.67, SD = 1.8) were significantly different from those in Zone I (M = 2.25, SD = 1.21), Zone II (M = 1.83, SD = 1.03), and Zone III (M = 2.14, SD = 146). The mean scores of speech reading English test in Zone IV (M = 3.78, SD = 1.71) were significantly different from those in Zone I (M = 1.25, SD = 1.29), Zone II (M = 1.3, SD = .65), and Zone III (M = 1.14, SD = .9). The mean scores of speech test in Zone IV (M = 16.22, SD = 5.04) were significantly different from those in Zone I (M = 6.08, SD = 3.48), Zone II (M = 7.42, SD = 3.50), and Zone III (M = 7.71, SD = 2.29). It means that the performance of young children with deafness of deaf school in Zone IV in reading recognition (Urdu & English), speech reading (Urdu & English), and speech was significantly different from those in other three zones.

Table 3

ANOVA for difference in the mean scores of tests on writing (Urdu & English) and Mathematics

Variables	Sum of Squares	df	Mean Square	F	Sig.
	2120.725	3	706.908	4.293	.011
English	5928.250	36	164.674		
	8048.975	39			
	993.516	3	331.172	6.964	.001
Urdu	1711.984	36	47.555		
	2705.500	39			
	1165.824	3	388.608	3.858	.017
Mathematics	3626.151	36	100.726		
	4791.975	39			

Table 3 shows that a one-way (between groups) ANOVA was conducted to identify the difference in mean scores of tests on writing (English & Urdu) and Mathematics taken from children with deafness on the basis of four zones in the Punjab province. Test scores were collected in three subjects i.e. writing (English); $F (3, 36) = 4.29$, $p = .011$; writing (Urdu): $F (3, 36) = 6.96$, $p = .001$; and mathematics: $F (3,36) = 3.86$, $p = .017$. There was a statistically significant difference in the results of three subjects. It means that children with deafness in all four zones had different levels of achievement in English, Urdu and mathematics. Post hoc test showed the multiple comparisons of test scores in these subjects.

Table 4

Multiple comparisons of test scores in writing (English & Urdu) and Mathematics on the basis of four zones

Tukey HSD

Dependent Variable	(I) zone	(J) zone	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
		2	-1.750	5.239	.987	-15.86	12.36
English	1	3	-1.750	6.103	.992	-18.19	14.69
		4	-18.417*	5.659	.013	-33.66	-3.18
		2	-1.833	2.815	.914	-9.42	5.75
Urdu	1	3	-4.286	3.280	.565	-13.12	4.55
		4	-13.111*	3.041	.001	-21.30	-4.92
		2	-1.667	4.097	.977	-12.70	9.37
Mathematics	1	3	-.702	4.773	.999	-13.56	12.15
		4	-13.639*	4.426	.020	-25.56	-1.72

*The mean difference is significant at the 0.05 level.

Post-hoc comparisons using the Tukey HSD test indicated that the mean scores of English writing test in Zone IV (M = 35.67, SD = 12.88) were significantly different from those in Zone I (M = 17.25, SD = 13.2), Zone II (M = 19, SD = 12.9), and Zone III (M = 19, SD = 11.94). The mean scores of Urdu writing test in Zone IV (M = 29.11, SD = 6.03) were significantly different from those in Zone I (M = 16, SD = 6.94), Zone II (M = 17.83, SD = 6.55), and Zone III (M = 20, SD = 8.36). The mean scores of mathematics test in Zone IV (M = 34.22, SD = 10.40) were significantly different from those in Zone I (M = 20.58, SD = 10.17), Zone II (M = 2.25, SD = 9.86), and Zone III (M = 21.29, SD = 9.62). It means that the performance of children with deafness in writing (Urdu & English) and Mathematics was significantly different in Zone IV than that of children with deafness in the other three zones.

Discussion on Major Findings

The results of ANOVA and post hoc comparisons indicated a significant difference in the mean scores of the reading recognition test (Urdu & English), speech reading test (Urdu & English), and speech test in the GDDHS in Zone IV from those in Zone I, Zone II, and Zone III. Similarly, the results of ANOVA and post hoc comparisons showed a significant difference in the mean scores of writing test (Urdu), writing test (English), and Mathematics test in the GDDHS in Zone IV from those in other three zones. It means that the performance of young children with deafness enrolled in GDDHS in Zone IV was significantly different from those studying in other three zones. The reason of this disparity was the hard working and innovative principal, competent and meticulous special education teachers, cooperation and coordination among principal, teachers, and parents, and healthy environment of the deaf school in Zone IV.

During my visit to this school for conducting the interview with the school principal, I came to know that she was a highly devoted and dedicated sort of a lady who was taking a keen interest in the education of young children with deafness. As has been reported earlier, she stated that she had developed books for young children with deafness with the help of concerned teachers. These books were proving helpful in teaching reading, writing, maths, speech and speech reading to young children with deafness.

Implications of the Study

The Early Childhood Special Education program for young children with deafness being run in Government Deaf & Defective Hearing Schools in Punjab can be improved through observing the following recommendations:

1. The restricted number of young children with deafness in one section should be kept to maintain the quality of education, and facilitate special education teachers during the performing of their duties. Preferably, an aide should be appointed in each class. Speech therapists should be appointed in schools on an emergent basis.
2. Early detection and intervention, and admissions of children in schools at an early age should be ensured through media campaigns, pamphlets, banners, and visits to far flung areas. A plan of action should be made, in this regard, for the mobilization of parents, professionals, and other community members. The parents should be involved in both the educational planning and decisions related to the placement of their children in the future.
3. Hearing aids should be provided to all young children with deafness, and their regular use and maintenance should be assured by developing a monitoring system.
4. It is a dire need of the hour to organize training programs for parents of YCWD on teaching speech, speech reading, auditory training, reading, writing, and mathematics to their children taking into consideration their academic and understanding level. Keeping in view the poor socio economic status of the parents, travelling, and daily allowances should be paid to them during training courses so as to reduce their financial burden.
5. Curriculum of K.G. I and K.G. II classes should be revised according to a standardized pattern of curriculum. The content including speech, speech reading, reading, writing, and mathematics should be given in a systematic form consisting of concepts/skills, specific learning outcomes, and methodology. Similarly, it should contain detailed guidelines regarding assessment procedures, record keeping, and planned activities.
6. Parent teacher meetings and parental guidance and counselling sessions need to be conducted on a regular basis. As parents have been found to be keenly interested in the academic progress of their children, they should be taught methods of teaching speech, speech reading, reading, writing, and mathematics to their young children with deafness.

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