



Influence of Home Language Environment on Reading Status in Malayalam among Grade 4 Students in Kerala

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Abstract

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Reading Difficulty, Malayalam, Parent communication, Parental support, Family utilization of resources, parent tutoring, Parental supervision at home.

This study administered Test of Reading Fluency and Pronunciation, Test of Reading Comprehension, and Scale of Home Language Environment in a sample of 156 grade 4 students in Kerala. Falling below the 25th percentile on any two of the three dimensions of reading achievement viz., reading fluency, reading comprehension, and pronunciation, along with teacher identification of the student as reading difficult was used to categorize them as Reading difficult (RD) and Normal Readers. It was found that if the parent doesn't enquire about co-curricular activities in school, doesn't make the child write Malayalam copy book, doesn't make the child write diary, doesn't make the child read textbooks regularly and doesn't make the child read other books than textbooks 6/10 are prone to be a RD by grade 4.

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Language is one of the most complex constructions of human culture that makes human progress possible in every field of life. Development of language in human child needs foundation and nourishment. Though school gives formal stage of language learning for all new learners they differ in acquiring language skills. One important reason for the difference in language acquisition in schools is the difference in language learning environment at home. Natural learning of any language occurs in the habitual environment of a human being. The introduction in language starts from home, parents and other family members. Only after this, the child learn language in a more systematic learning environment of school. School is just an extension of home language environment because listening and speaking skills, primary vocabulary and basic grammatical concepts develops from the home itself. Thus, a better language edifice can be created in learners on a strong foundation of a congenial home language environment which imparts timely nurturing of language. Reading achievement of fourth graders in Malayalam was reported by Annual Status of Education Report (Rural) 2009. Only 3.4 percent of students can read letters, 11 percent of students can read words, 25.8 percent of students can read grade 1 text and 59.2 percent of students can read grade 2 text. A large number of students have not acquired reading skills according to their age. This study is for identifying home environment factors that contributes to reading skills in Malayalam among lower primary school pupils of Kerala.

Home Language Environment and Language Outcomes in School Children

Language learning provided to children at home has an important role in the development of reading skills. Home environmental factors like family possessions, reading attitude of parents, reading materials, literacy activities, home-school relation, and affirmative parental views all have an impact on reading activities of students (Chansa-Kabali & Westerholm, 2014). On the other hand, unsupportive home environment was related with increased under-achievement in reading and Home Learning Environment for reading differentiated underachievers from average and high achievers (Melhuish, Phan, Sylva, Sammons, Siraj-Blatchford & Taggart, 2008). Positive and affective parent children interactions, Reading interactions of child and parent, academic motivation by parents, parent's home literacy activities, environmental literary practices and support at home, Socio Economic Status,

books for school subjects available at home, Mothers supportiveness, Provision of learning materials, parental involvement, reading activity at home, Family possessions, reading attitude of parents, reading materials, literacy activities, home-school relation, and affirmative parental views, are found to be related with reading. Physical and pedagogical resources along with active engagement related to language activities provided by home is the corner stone of language learning.

Parental involvement and reading activity at home were connected to reading achievement scores of children from kindergarten to 5th grade (Moon, 2012). Supportive home environment improve reading skills from the age of three to middle school (Molfese, Modglin & Molfese, 2003; Reese, Garnier; Gallimore & Goldenberg, 2000). Home literacy environment has influence on letter knowledge and reading among kindergarteners (Shah 2000). Home Environment and SES are significant predictors of language abilities of 3-5 year old children (Miser, 2010). SES and collaboration with parents were found to influence students reading achievements among 4th grade students (Geske & Ozola, 2008). Home Learning Environment and Socio Economic Status have a significant effect on teacher rated reading capacity (Hartas, 2012). Environmental literary practices and support at home and SES were associated Spanish and English Scores of Vocabulary of fifth grade children (Duursma, Romero-Contreras, Szuber, Proctor, Snow, August & Calderon, 2007). Fathers' education and mothers' occupation are the powerful predictors of reading and writing of grade 2 children (Ngorosho & Lahtinen 2010).

Father's education, books for school subjects, quality of house wall material are the significant predictors of reading ability of grade 3 students from rural area (Ngorosho, 2011). Learning event scores based on children's participation in literary activities, the quality of mother engagements, availability of learning materials and children's literacy skills were significantly related to letter-word identification (Rodriguez & Tamis-LeMonda, 2011). Relationship exist between home environment factors and reading achievement among grade 6 students (Kanyongo, Certo & Launcelot, 2006) as well.

Parental involvement can improve the reading and writing ability of children (Prakash & Ashalatha, 2009). Rashid, Morris and Sevcik (2005) indicated that parent's home literacy activities is a significant predictor of passage comprehension of elementary school children. Instructional and social-emotional quality of parents had no effect on word decoding but it had an effect in development of reading comprehension (Leseman & Jong 2001).

Relatedness to parents contributed to students' engagement, academic motivation and in academic performance (Furrer & Skinner, 2003). Affective atmosphere during story book interaction in grade 1 predicted children's reading activity in grade 3 (Mackler, Sonnenschein & Serpell, 2001). Positive and affective parent-children interactions motivated the child to read challenging materials, and it is the pathway to reading achievement. Sonnenschein and Munsterman (2002) found the predictive power of affective quality of the reading interaction in children's motivation for reading. Parents' attitude toward reading significantly predicted reading achievement (Abu-Rabia & Yaari, 2012).

Method

Participants

Sample used for this study constitute grade 4 students from 11 Lower Primary Schools of Thrissur district in Kerala (N=156). The sample was representative of the population on sex ratio and type of school management.

Instruments

Reading achievement in Malayalam at the end of Grade 4 is measured as mean of reading fluency, reading comprehension, and pronunciation with equal weightage to all three dimensions. Difficulty in Reading in Malayalam is denoted as falling below the 25th percentile on any two of the three dimensions of reading achievement viz., reading fluency, reading

comprehension, and pronunciation, along with teacher identification of the student as reading difficult. Students who pass these criteria are denoted as Normal Readers.

Test of Reading Fluency and Pronunciation

Test of Reading Fluency and Pronunciation is used to measure the extent of reading fluency and pronunciation of Grade 4 students. Thirty-one items (31 letters) included in the test of pronunciation were noted from lower primary Malayalam textbooks. A narrative prepared by including these letters was used for testing pronunciation and to evaluate reading fluency. Students were asked to read the narrative individually and it was recorded by using a voice recorder. Based on these voice records, correct pronunciation was scored as 1 and incorrect as 0. Content Validity Index for Test of pronunciation was found to be 0.97 and Inter-rater reliability is 0.90. Reading fluency is scored by means of a five point scale. The scale has seven dimensions namely Expression, Phrasing, Self-correction, Word beginnings and endings, Substitution, Omissions and Repetition and regression. Content Validity Index for each dimension of Test of Reading fluency was 0.99 and Inter-rater reliability is 0.93.

Test of Reading Comprehension

Test of Reading Comprehension is used to measure reading comprehension ability of Grade 4 students. A part of Test of Fundamental Reading Skills in Malayalam (Abdul Gafoor & Kaleeludeen, 2008) was adopted and revalidated by further item analysis, and by establishing reliability and Validity. There were eight items in the test and administered in classroom group. Twenty minutes were given to complete the test. Spearman-Brown coefficient for reading comprehension test is .77. Cronbach's Alpha reliability coefficient for reading comprehension is 0.77 (N=156). Reading comprehension test scores highly correlated ($r=.84$, $N=30$) with another Reading comprehension test (Sumangala & Abdul Nazar, 1999).

Scale of Home Language Environment

Scale of Home Language Environment is used to measure language fostering environment at home. The scale has forty seven items in four dimensions which are Parental communication with children, Familiarizing with language forms, Parental support/assistance, and Utilization of resources. The scale was individually administered to students and recorded their responses on a 3-point scale. The administrator recorded their rating and final score for the student is the sum of the ratings for total items in the scale.

Correlation of four dimensions of Home Language Environment with total scale score showed high correlation ranging from 0.61 to 0.85 ($n=51$, $p<.01$) with the strength of the inter-dimensional relationship on the expected lines. Reliability coefficient estimated by Spearman-Brown method is .94 ($n= 156$, $p<.01$) and Cronbach's Alpha reliability coefficient was also found out for Scale of Home Language Environment and is .94 ($n=156$, $p<.01$). Test retest reliability after a week was .94 ($N=50$).

Results and Discussion

Binary logistic regression was performed to predict the impact of *Parent communication* on reading difficulty of Grade 4 students (Table 1).

Table 1

Logistic Regression Analysis for Identifying RD Students by Parent communication

Predictor	B	S.E	Wald	df	Sig.	Exp(B)
Enquiring about co-curricular activities in school	-1.19	.36	10.90	1	.001	.30
Clears doubts and reply questions	-.83	.34	6.01	1	.01	.44
Constant	1.29	.63	4.23	1	.04	3.62

Cox & Snell R Square=.15
 Nagelkerke R Square=.25
 Model Chi square (2)= 24.8, p<.01
 Specificity (% of students rightly Identified as NR) 96.9
 Sensitivity (% of students rightly Identified as RD) 25.9
 Overall (% of students rightly screened as RD or NR) 84.4

A test of the model with these two predictors for identifying RD among lower primary students against a constant only model was statistically significant, indicating that the predictors as a set reliably distinguished between RD and NR (Chi-square (2) = 24.8, p<.01). The model as a whole explained between 15% (Cox and Snell R square) and 25% (Nagelkerke R squared) of the variance in Reading Difficulty, and the prediction success overall was 84.4%, [25.9% for RD (sensitivity) and 96.9 % for NR (specificity)]. Negative B values indicate that an increase in the independent variable score will result in a decreased probability of the case being identified as RD. The odds ratio .30 and .44 are less than 1, indicating that an increase in predictors makes students less likely to become RD. i.e. the parents who are weak in inquiring about co-curricular activities in school, clearing doubts and replying questions, the students are more likely to become RD, than those who receive strong parental communication.

Binary logistic regression was performed to predict the impact of *Familiarizing language forms* on reading difficulty of Grade 4 students (Table 2).

Table 2

Logistic Regression Analysis for Identifying RD Students by Familiarizing language forms

Predictor	B	S.E	Wald	df	Sig.	Exp(B)
practice/trains reciting poems	-.74	.31	5.84	1	.02	.48
make me narrate stories	-.76	.30	6.45	1	.01	.47
Constant	-.19	.32	.37	1	.55	.82

Cox & Snell R Square=.14
 Nagelkerke R Square=.23
 Model Chi square (2)= 23.88, p<.01
 Specificity (% of students rightly Identified as NR) 100
 Sensitivity (% of students rightly Identified as RD) 0
 Overall (% of students rightly screened as RD or NR) 81.9

A test of the model with these two predictors for identifying RD among lower primary students against a constant only model was statistically significant, indicating that the predictors as a set reliably distinguished between RD and NR (Chi-square (2) = 23.88, p<.01). The model as a whole explained between 14% (Cox and Snell R square) and 23% (Nagelkerke R squared) of the variance in Reading Difficulty, and the prediction success overall was 81.9%, [0% for RD (sensitivity) and 100 % for NR (specificity)]. Negative B values indicate that an

increase in the independent variable score will result in a decreased probability of the case being identified as RD. The odds ratio .48 and .47 are less than 1, indicating that an increase in predictors makes students less likely to become RD. i.e. The parents who are weak in giving practice in reciting poems and make the student narrate stories, the students are more likely to become RD, than those who receive more familiarization of language forms.

Binary logistic regression was performed to predict the impact of *Parental support* on reading difficulty of Grade 4 students (Table 3).

Table 3

Logistic Regression Analysis for Identifying RD Students by Parental support 1 (Parental Supervision)

Predictor	B	S.E	Wald	df	Sig.	Exp(B)
corrects my writing errors	-.828	.383	4.683	1	.030	.44
make write Malayalam copy	.839	.323	6.743	1	.009	2.31
make me read textbooks	-1.001	.423	5.597	1	.018	.37
make me read other books at home	-1.147	.337	11.590	1	.001	.32
Constant	1.513	.723	4.373	1	.037	4.54

Cox & Snell R Square=.21
 Nagelkerke R Square=.35
 Model Chi square (4)= 36.44, p<.01
 Specificity (% of students rightly Identified as NR) 96.0
 Sensitivity (% of students rightly Identified as RD) 35.7
 Overall (% of students rightly screened as RD or NR) 85.0

A test of the model with these four predictors for identifying RD among lower primary students against a constant only model was statistically significant, indicating that the predictors as a set reliably distinguished between RD and NR (Chi-square (4)= 36.44, p<.01). The model as a whole explained between 21% (Cox and Snell R square) and 35% (Nagelkerke R squared) of the variance in Reading Difficulty, and the prediction success overall was 85%, [35.7% for RD (sensitivity) and 96% for NR (specificity)]. Negative B values indicate that an increase in the independent variable score will result in a decreased probability of the case being identified as RD. The odds ratio .44, .37 and .32 are less than 1, indicating that an increase in predictors makes students less likely to become RD. i.e. The parents who are weak in correcting writing errors, promoting Malayalam copy writing, reading textbooks and extra reading, the students are more likely to become RD, than those who receive strong parental support.

Binary logistic regression was performed to predict the impact of *Parental support* on reading difficulty of Grade 4 students (Table 4).

Table 4

Logistic Regression Analysis for Identifying RD Students by Parental support 2 (Parental Tutoring)

Predictor	B	S.E	Wald	df	Sig.	Exp(B)
practices reading expressions	-.75	.249	9.147	1	.002	.47
trains writing diaries	-.856	.250	11.746	1	.001	.43
Constant	.412	.412	1.001	1	.32	1.510

Cox & Snell R Square=.18
 Nagelkerke R Square=.27
 Model Chi square (2)= 29.74, p<.01
 Specificity (% of students rightly Identified as NR) 93.7
 Sensitivity (% of students rightly Identified as RD) 35.7
 Overall (% of students rightly screened as RD or NR) 85.0

A test of the model with these two predictors for identifying RD among lower primary students against a constant only model was statistically significant, indicating that the predictors as a set reliably distinguished between RD and NR (Chi-square (2)=29.74, p<.01). The model as a whole explained between 18% (Cox and Snell R square) and 27% (Nagelkerke R squared) of the variance in Reading Difficulty, and the prediction success overall was 85%, [35.7% for RD (sensitivity) and 93.7% for NR (specificity)]. Negative B values indicate that an increase in the independent variable score will result in a decreased probability of the case being identified as RD. The odds ratio .47 and 43 are less than 1, indicating that an increase in predictors makes students less likely to become RD. i.e. The parents who are weak in giving training in diary writing and practicing reading with expression the students are more likely to become RD, than those who receive strong parental support.

Binary logistic regression was performed to predict the impact of utilization of resources on reading difficulty of Grade 4 students (Table 5)

Table 5

Logistic Regression Analysis for Identifying RD Students by Family utilization of resources

Predictor	B	S.E	Wald	df	Sig.	Exp(B)
Reads newspaper	-.75	.23	9.15	1	.002	.47
Reads comics	-.86	.25	11.75	1	.001	.43
Constant	.41	.41	1.00	1	.32	1.51

Cox & Snell R Square=.18
 Nagelkerke R Square=.29
 Model Chi square (2)= 29.74, p<.01
 Specificity (% of students rightly Identified as NR) 93.0
 Sensitivity (% of students rightly Identified as RD) 35.7
 Overall (% of students rightly screened as RD or NR) 83.2

A test of the model with these two predictors for identifying RD among lower primary students against a constant only model was statistically significant, indicating that the predictors as a set reliably distinguished between RD and NR (Chi-square (2)=29.74, p<.01). The model as a whole explained between 18% (Cox and Snell R square) and 29% (Nagelkerke R squared) of the variance in Reading Difficulty, and the prediction success overall was 83.2%, [35.7% for RD (sensitivity) and 93% for NR (specificity)]. Negative B values indicate that an increase in the independent variable score will result in a decreased probability of the case being identified as RD. The odds ratio .47 and 43 are less than 1, indicating that an increase in predictors makes students less likely to become RD. i.e. the students who doesn't read

newspapers and comics at home, are more likely to become RD, than those who read newspapers and comics at home.

Dimension wise regression analysis of Home Language Environment has recognized twelve significant predictors of Malayalam Reading Difficulty. These twelve variables were together entered as predictors in binary regression test their combined predictive efficiency on RD. Results are in the Table 6.

Table 6

Logistic Regression Analysis for Identifying RD Students by selected items of HLE

Predictor	B	S.E	Wald	df	Sig.	Exp(B)
Enquiring about co-curricular activities in school	-1.387	.488	8.071	1	.004	.25
Making the child write Malayalam copy book	1.129	.396	8.136	1	.004	3.09
Making the child to write diary	-.767	.341	5.055	1	.025	.46
Making the child read textbooks regularly	-1.885	.605	9.704	1	.002	.15
Making child read other books than textbooks	-1.174	.411	8.164	1	.004	.31
Constant	3.951	1.149	11.818	1	.001	52.009
Cox & Snell R Square=.36						
Nagelkerke R Square=.57						
Model Chi square (5)= 66.92, p<.01						
Specificity (% of students rightly Identified as NR) 95.2						
Sensitivity (% of students rightly Identified as RD) 59.3						
Overall (% of students rightly screened as RD or NR) 88.8						

Binary logistic regression was performed to predict the impact of home language environment on reading difficulty of Grade 4 students. A test of the model with these five predictors for identifying RD among lower primary students against a constant only model was statistically significant, indicating that the predictors as a set reliably distinguished between RD and NR (Chi-square (5)= 66.92, p<.01. The model as a whole explained between 36% (Cox and Snell R square) and 57% (Nagelkerke R squared) of the variance in Reading Difficulty, and the prediction success overall was 88.8%, [59.3% for RD (sensitivity) and 95.2% for NR (specificity)]. Negative B values indicate that an increase in the independent variable score will result in a decreased probability of the case being identified as RD. The odds ratio .25, .46, .15 and 31 are less than 1, indicating that an increase in predictors makes students less likely to become RD.

Conclusion

If the parent doesn't Enquire about co-curricular activities in school, doesn't make the child write Malayalam copy book, doesn't make the child write diary, doesn't make the child read textbooks regularly and doesn't make the child read other books than textbooks the child is more likely to become RD, than those who engage these activities at home. If answer to all the 5 questions is No, a child is 6/10 prone to be a RD by grade 4. Home language environment has an effect on deciding RD in Malayalam among lower primary students. Family - child interaction can be in a variety of forms. Learning activities at home, home reading activities, parental teaching, reading related activities of child at home, educational interactions, social-emotional quality during communication with children, parents' view about academic progress

of children, parents' knowledge about reading materials, availability of reading material and its utilization are very important in developing reading skill among children. If the child owes a good language environment at home the child can develop his/her reading ability and thus an enhancement in academic and social life.

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