Kurdish Studies
May 2022
Volume: 10, No: 1, pp 251-255
ISSN: 2051-4883 (Print) | ISSN 2051-4891 (Online)
www.KurdishStudies.net

DOI: 10.53555/ks.v10i1.3820

The Relationship Between Home Educational Background and Cognitive Style of Secondary School Pupils

Dr. Laya A B*

*Assistant Professor, SNM Training College, Moothakunnam, Kerala, India, layasekhar@gmail.com

Abstract
The study was to investigate the relationship between Home Educational Background and Cognitive Style of secondary school pupils. The sample selected was 600 pupils of Ernakulam district and normative survey was the method of investigation. The tools used were Group Embedded Figures Test (GEFT) of Oltman,et.al,1971 for assessing Cognitive Style and Home Educational Background Rating Scale(2006) for assessing the educational level of parents which is prepared by the investigator. The findings of the study showed that there exists significant relationship between Home Educational Background and Cognitive Style. The positive correlation shows that when Home Educational Background increases Cognitive Style increases for the sub sample, Boys, Girls, Malayalam Medium students, students in Private management schools and for the total sample. But there exists no significant relationship between Home Educational Background and Cognitive Style for English medium students and for students of Government schools.

Key words: cognitive style, field dependence, field independence, home educational background

Introduction

The family environment, along with the nature of the parent-child relationship, plays a significant role in shaping children's behaviour, thought process and decision-making. Parents who are educated raise children to have healthy self, by building their confidence level by developing their intellect and skills through different activities that help them develop a healthy attitude about learning and independent thinking. Parental educational level is an important predictor of children's educational and behavioural outcomes relates to children's academic achievement through parents' beliefs and behaviours (Davis-Kean, 2005). J.S. Eccles (2005) emphasised that children often learn through observation within the home environment. When parents serve as role models by engaging in activities such as reading or pursuing continuing education, they provide children with direct learning experiences that shape their attitudes and behaviours. Home Educational Background means educational experience of the members of the family especially parents.

Parents' educational levels, values, and support systems contribute to the learning atmosphere that students experience outside school, potentially influencing how they process information and solve problems—also known as their cognitive style. Cognitive style refers to an individual's preferred way of gathering, processing, and interpreting information (Riding & Cheema, 1991). Understanding how home educational background interacts with cognitive style is essential for educators, as it may influence teaching strategies and the provision of equitable learning opportunities. Cognitive style is defined as an individual's characteristic approach to perceiving, processing, and interpreting information (Riding & Cheema, 1991). Cognitive controls represent patterns of thinking that control the ways in which individuals think about and process information(Jonassen and Grabowski,1993). They are closely related to mental abilities and are often used as an assessment of ability. Hence cognitive controls are measures of performance. Field dependence-independence is one such example where field independence is considered to be better than field dependence. Cognitive styles refer to the consistent ways individuals acquire knowledge (cognition) and process information (conceptualization). They are associated with habitual mental behaviors used when solving problems and significantly influence how information is gathered, organized, and applied. Cognitive Style is an individual's characteristic and consistent approach of organizing and processing information (Tennant,1988).

Literature Review

Home educational background refers to the formal education levels attained by the parents or guardians of a student, as well as the intellectual atmosphere fostered at home. Research has shown that parental education levels are directly correlated with academic achievement and attitudes toward learning (Davis-Kean, 2005). Educated parents are more likely to provide resources such as books, learning technologies, and academic support, all of which contribute to a stimulating cognitive environment (Dubow, Boxer, & Huesmann, 2009).

Moreover, the home literacy environment comprising reading habits, parental involvement, and the value placed on education can significantly affect a child's intellectual engagement and learning behaviours (Senechal & LeFevre, 2002). These factors collectively shape how students think, learn, and approach problem-solving tasks.

Cognitive style is defined as an individual's consistent manner of organizing and processing information (Messick, 1996). Styles such as field dependence/independence, analytic/holistic thinking, and reflective/impulsive processing are frequently studied in educational contexts. Research suggests that cognitive styles are relatively stable but can be influenced by

environmental and socio-cultural factors, including the educational practices at home (Zhang & Sternberg, 2005).
For instance, children from homes with high academic expectations and support may develop more analytic or reflective cognitive styles due to repeated exposure to structured thinking and problem-solving tasks. Conversely, limited educational support at home may restrict the development of these styles, impacting students' ability to engage with academic material effectively.
Several studies have examined the link between socio-economic or educational background and cognitive development. For example, Bradley and Corwyn (2002) found that home environments rich in cognitive stimulation were predictive of advanced cognitive and academic outcomes in children. Similarly, Zhang and Watkins (2001) found that family background had a measurable impact on students' learning styles and cognitive preferences.
These findings support the idea that students' thinking styles are not solely biologically determined but are also shaped by their immediate environments, particularly the home setting. Understanding this relationship can help educators recognise the diversity in learners' cognitive approaches and tailor teaching methods accordingly

Objectives
The present study had the following objective
1) To compare the mean scores of Home Educational Background between English medium and Malayalam medium, Government and Private students.
2) To compare the mean scores of Cognitive Style between Boys and Girls, English medium and Malayalam medium, Government and Private students.
3) To estimate the relationship between Home Educational Background and Cognitive Style for Boys, Girls, Government, Private, English medium students, Malayalam medium students and for the total sample.

Methodology
The normative survey was the method of investigation. Home Educational Background was selected as the independent variable and Cognitive Style was treated as the dependent variable for the present study. The study was conducted on a sample of 600 students of Ernakulam district. The sample was selected by applying stratified sampling technique, giving due representation to factors like gender, management category of schools and medium of instruction.
The tools used were the following
- Home Educational Background Rating Scale prepared by the investigator.
- Group Embedded Figures Test (GEFT) for assessing Cognitive Style.
(Otlman,et.al,1971)
The main statistical technique employed for the present investigation were
1)Test of significance of difference between mean scores of large independent samples.
2)Pearson's product moment coefficient of correlation.

Findings of The Study
The findings of the study revealed from the statistical analysis are the following.

Test of Significance of Difference Between Sub Samples in Their Mean Scores of Home Educational Background
The study investigated the differences in Home Educational Background among secondary school students based on two subsamples: medium of instruction and type of school management.

Table 1: Data and result of t -test of Home Educational Background

Sub samples	Mean		t-value
Between students of English and Malayalam medium	English	Malayalam	15.07
	4.07	2.87	
Between students of Government and Private management	Government	Private	5.99
	3.08	3.64	

The mean score of English medium students 4.07 is higher than that of Malayalam medium students 2.87. The obtained t-value of 15.07 is considerably high, indicating a significant difference between the two groups. This suggests that students from English medium schools generally come from homes with stronger educational backgrounds compared to those from Malayalam medium schools.
Change in the medium of instruction also showed significant differences in the mean scores of Home Educational Background. Private school students with a mean score 3.64 showed higher Home Educational Background compared to government school students with a score of 3.08. The t-value of 5.99 implies a significant difference between these two groups. This shows that private school students tend to come from families with relatively better educational qualifications or more supportive educational environments than their government school counterparts.
The results reveal that both the medium of instruction and the type of school management have a significant impact on the Home Educational Background of secondary school students. Students in English medium and private schools are associated with homes having a more favorable educational background than those in Malayalam medium and government schools. It indicates the threat prevailing in the existing situation to the government and Malayalam medium schools. The parents with

the increasing level of education opted either English medium or private management schools or private English medium schools. It again emphasis that the time to enrich the quality of these schools have exceeded.

Test of Significance of Difference Between Sub Samples in Their Mean Scores of Cognitive Style

The study examined the differences in Cognitive Style scores among secondary school students based on three subsamples: gender, medium of instruction and type of school management.

Table 2: Data and result of t -test of Cognitive Style

Sub samples	Mean		t-value
Between boys and girls	Boys	Girls	7.53
	6.25	4.12	
Between students of English and Malayalam medium	English	Malayalam	6.10
	6.15	4.39	
Between students of Government and Private management	Government	Private	1.60
	4.90	5.39	

The data reveals that boys have a higher mean cognitive style score of 6.25 compared to girls with mean score 4.12. The t-value of 7.53 indicates a significant difference between boys and girls in their cognitive style. This suggests that boys tend to exhibit stronger or more developed cognitive styles compared to girls in the sample studied.

Students studying in English medium schools have a higher mean cognitive style score of 6.15 compared to those in Malayalam medium schools with mean score 4.39. The t-value of 6.10 shows a significant difference between these two groups. Thus, the medium of instruction appears to influence the cognitive style, with English medium students displaying more advanced cognitive styles.

The mean cognitive style scores of government school students, 4.90 and private school students, 5.39 showed only a small difference. The t-value of 1.60 is not statistically significant, indicating that there is no meaningful difference in cognitive style between students from government and private schools.

The findings indicate that gender and medium of instruction are significant factors influencing the cognitive style of secondary school students, while the type of school management, government or private does not significantly affect cognitive style. Specifically, boys and English medium students show higher levels of cognitive style development compared to girls and Malayalam medium students.

Relationship Between Home Educational Background and Cognitive Style

The study investigated the relationship between Home Educational Background and Cognitive Style among secondary school students, considering both the total sample and various subsamples based on gender, medium of instruction, and type of school management.

Table 3: Data and results of correlation between Home Educational Background and Cognitive Style

SAMPLE	N	r	CONFIDENCE LEVEL		SHARED VARIANCE	SIG	LS
Boys	306	0.039	-0.029	0.246	1.932	0.015	0.05
Girls	294	0.188	0.078	0.298	3.53	0.001	0.01
English	278	0.027	-0.091	0.145	0.073	0.657	NS
Malayalam	322	0.190	0.085	0.295	3.61	0.001	0.01
Government	228	0.107	-0.022	0.236	1.145	0.109	NS
Private	372	0.227	0.131	0.324	5.153	0.000	0.01
Total	600	0.196	0.119	0.273	3.38	0.000	0.01

For the total sample, a positive correlation 0.196 was found between Home Educational Background and Cognitive Style, which is statistically significant at the 0.01 level. This indicates that students from more educationally supportive home environments tend to develop better cognitive styles.

When considering gender differences, boys showed a weak but statistically significant positive correlation 0.039, significant at the 0.05 level, while girls displayed a moderate and significant positive correlation 0.188, significant at the 0.01 level. These results indicate that the home educational background has a stronger relationship with cognitive style among girls compared to boys.

In terms of the medium of instruction, Malayalam medium students exhibited a moderate positive correlation 0.190, which was significant at the 0.01 level. In contrast, for English medium students, the correlation was 0.027, which was not statistically significant. This implies that the home educational background meaningfully relates to cognitive style for Malayalam medium students but not for English medium students.

Regarding the type of school management, private school students showed a moderate and highly significant positive correlation 0.227, significant at 0.01 level. However, for government school students, the correlation was 0.107, which was

not significant. Therefore, the influence of home educational background on cognitive style is notable among private school students but not among government school students.

It was found that there exists significant relationship between Home Educational Background and Cognitive Style for the total sample and for the sub samples Boys, Girls, students of Malayalam medium and Private Management. However there exists no significant relationship between Home Educational Background and Cognitive Style for the sub samples students of English medium and Government Schools.

Discussions

The analysis of Home Educational Background revealed that students from English medium schools and private schools had significantly higher scores of home educational background than students from Malayalam medium and Government schools. This is consistent with the findings of Eccles (2005), who reported that family socio-economic status, educational aspirations, and parental involvement are generally higher among students in Private and English medium schools, which in turn impacts students' academic experiences. Sirin (2005) also emphasized that socio-economic status is a strong predictor of educational outcomes, indicating that students with more educated and resourceful home environments benefit more in school.

When examining differences in Cognitive Style, the study found that boys scored significantly higher than girls, and English medium students performed better than Malayalam medium students. These findings mirror those of Zhang (2004), who observed gender differences in cognitive processing styles, with males showing stronger analytical and field-independent tendencies. Moreover, the influence of medium of instruction on cognitive style can be explained by the work of Cummins (2000), who argued that second language learners, especially those exposed to English early on, often develop enhanced cognitive flexibility and problem-solving skills due to bilingualism and the educational demands of English medium curricula.

The core finding of a positive and significant relationship between Home Educational Background and Cognitive Style for the total sample supports earlier research by Bradley and Corwyn (2002), who noted that enriching home environments, characterised by intellectual stimulation and parental educational support, contribute significantly to cognitive development and learning styles. The stronger correlation observed among girls compared to boys aligns with Flouri and Buchanan (2004), who found that parental involvement and home educational activities had a greater positive impact on girls' academic self-concept and cognitive behaviours than on boys.

Interestingly, the study found that among Malayalam medium students, the relationship between home educational background and cognitive style was significant, whereas it was not significant for English medium students. This pattern suggests that students in Malayalam medium schools might depend more heavily on their home environments for cognitive development, a finding that resonates with Vygotsky's (1978) socio-cultural theory, which emphasizes the critical role of the immediate home and social environment in cognitive growth, especially where external educational support may be less intense or varied.

In terms of school management, the finding that private school students showed a significant relationship between home educational background and cognitive style, whereas government school students did not, can be related to Coleman's (1966) classic study, which emphasized that family background plays a more crucial role than school characteristics in student outcomes. In private schools, where more resources and parental involvement are often found, home educational background has a stronger positive effect, while in government schools, students might face institutional and resource limitations that weaken the home-school connection.

Educational Implications

Home Educational Background was found to have a significant positive relationship with Cognitive Style, especially among girls, Malayalam medium students, and private school students, it is crucial for educators and policymakers to recognise the influential role of the home environment in shaping students' cognitive skills. Schools should develop programs that actively engage parents in the educational process by providing guidance on how to create intellectually stimulating home environments, including encouraging reading habits, promoting discussions, and supporting problem-solving activities at home.

Secondly, the finding that girls benefited more from the home educational background than boys suggests that specific interventions targeted at boys may be necessary to maximise the positive influence of the home environment on their cognitive development. Programmes focusing on enhancing boys' engagement with cognitive activities at home, through parental encouragement and involvement, could help bridge this gap.

Moreover, the significant difference observed between Malayalam medium and English medium students indicates a need for Malayalam medium schools to reinforce cognitive style development by integrating more critical thinking, problem-solving tasks, and active learning strategies into the curriculum. For English medium students, although the home background did not show a strong correlation with cognitive style, the schools may already be providing a rich cognitive environment; however, continuous efforts should be made to make this accessible to all students, regardless of their home conditions.

The lack of a significant relationship between Home Educational Background and Cognitive Style among Government school students highlights the urgent need for systemic support. Government schools should implement school-based interventions aimed at compensating for the potential educational disadvantages of home environments. These may include after-school enrichment programs, mentorship opportunities, cognitive skills training workshops, and providing educational resources to students who might not have access to them at home.

Additionally, the strong positive correlation found among private school students suggests that educational strategies employed in private institutions, such as personalized attention, parental engagement, and resource availability, can be models for improving government school practices.

The educational practices in the schools can be improved by providing more Field Independent activities and class works

especially for children whose parents are not highly educated. Children of poorly educated parents should be provided with class works and remedial teaching rather than home assignments. Active learning methods like debate, discussion, brainstorming, Socratic method should be promoted in a collaborative manner, so that the difference among the educational level of parents doesn't reflect. Students should be encouraged to think and express their opinion about various things that are happening in their surroundings in order to promote their cognitive style.

Conclusion

The study emphasises that cognitive development is not solely the product of school-based learning but is deeply influenced by the interaction between home and school environments. Thus, fostering strong home-school partnerships, ensuring equitable access to cognitive development opportunities, and designing curricula that promote cognitive flexibility and critical thinking across diverse student groups are essential steps toward educational equity and excellence. At the same time, they highlight the need for schools, particularly Government and Malayalam medium institutions, to provide additional support mechanisms to bridge the cognitive development gap. Educational stakeholders must recognize the interplay between home and school factors and work collaboratively to create learning environments that nurture cognitive growth for all students.

References

1. Bradley, R. H., & Corwyn, R. F. (2002). Socioeconomic status and child development. *Annual Review of Psychology, 53*(1), 371–399. https://doi.org/10.1146/annurev.psych.53.100901.135233
2. Coleman, J. S. (1966). *Equality of educational opportunity (The Coleman Report)*. U.S. Department of Health, Education, and Welfare.
3. Cummins, J. (2000). *Language, power and pedagogy: Bilingual children in the crossfire*. Multilingual Matters.
4. Davis-Kean, P. E. (2005). The influence of parent education and family income on child achievement: The indirect role of parental expectations and the home environment. *Journal of Family Psychology, 19*(2), 294–304. https://doi.org/10.1037/0893-3200.19.2.294
5. Dubow, E. F., Boxer, P., & Huesmann, L. R. (2009). Long-term effects of parents' education on children's educational and occupational success. *Merrill-Palmer Quarterly, 55*(3), 224–249. https://doi.org/10.1353/mpq.0.0030
6. Eccles, J. S. (2005). Studying gender and ethnic differences in participation in math, physical science, and information technology. *New Directions for Child and Adolescent Development, 2005*(110), 7–14.
7. Eccles, J. S., & Davis-Kean, P. E. (2005). Influences of parents' education on their children's educational attainments: The role of parent and child perception. *London Review of Education, 3*(3), 191–204.
8. Flouri, E., & Buchanan, A. (2004). Early father's and mother's involvement and child's later educational outcomes. *British Journal of Educational Psychology, 74*(2), 141–153.
9. Jonassen, D. H., & Grabowski, B. L. (1993). Field dependence and field independence (Global vs. Articulated Style). In *Handbook of individual differences, learning, and instruction* (pp. 115–142). Lawrence Erlbaum Associates.
10. Kogan, N. (1976). *Cognitive styles in infancy and early childhood*. New Jersey: Lawrence Erlbaum Associates.
11. Kumar, P. K. (1993). *Interaction effect of intelligence, cognitive style and approaches to studying on achievement of biology of secondary school pupils* [Doctoral dissertation, University of Calicut].
12. Lamerz, A., Kuepper-Nybelen, J., Wehle, C., Bruning, N., Trost-Brinkhues, G., Brenner, H., Hebebrand, J., & Herpertz-Dahlmann, B. (2005). Social class, parental education, and obesity prevalence in a study of six-year-old children in Germany. *International Journal of Obesity, 29*, 373–380.
13. Messick, S. (1996). Cognitive styles and learning strategies: Some implications for training and education. In *Learning styles and strategies* (pp. 59–74). Lawrence Erlbaum Associates.
14. P.K., Aruna, & P., Usha. (2006). Influence of cognitive style, intelligence and classroom climate on process outcomes in science. *Edu Tracks, 5*, 30–33.
15. Riding, R. J., & Cheema, I. (1991). Cognitive styles—An overview and integration. *Educational Psychology, 11*(3–4), 193–215. https://doi.org/10.1080/0144341910110301
16. Riding, R. J., & Rayner, S. (1998). *Cognitive styles and learning strategies: Understanding style differences in learning and behaviour*. London: David Fulton Publishers.
17. Senechal, M., & LeFevre, J. A. (2002). Parental involvement in the development of children's reading skill: A five-year longitudinal study. *Child Development, 73*(2), 445–460. https://doi.org/10.1111/1467-8624.00417
18. Sirin, S. R. (2005). Socioeconomic status and academic achievement: A meta-analytic review of research. *Review of Educational Research, 75*(3), 417–453.
19. Solso, R. L. (1974). *Cognitive psychology*. India: Pearson Education.
20. Tennant, M. (1988). *Psychology and adult learning*. Routledge.
21. Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
22. Yazedjian, A., Toews, M. L., & Navarro, A. (2009). Exploring parental factors, adjustment, and academic achievement among White and Hispanic college students. *Journal of College Student Development, 50*(4), 458–467.
23. Zhang, L. F. (2004). Thinking styles: University students' preferred teaching styles and their conceptions of effective teachers. *The Journal of Psychology, 138*(3), 233–252.
24. Zhang, L. F., & Sternberg, R. J. (2005). A threefold model of intellectual styles. *Educational Psychology Review, 17*(1), 1–53. https://doi.org/10.1007/s10648-005-1635-4
25. Zhang, L. F., & Watkins, D. (2001). Cognitive development and student approaches to learning: An investigation of Perry's theory with Chinese and Australian university students. *Higher Education, 41*(3), 239–261.