

Is Cognitive and Literacy Interrelated - An Exploratory Study from Students' Perspective

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Abstract

The objective of the study was to identify the important Cognitive and Literacy characteristics exhibited by the students perusing UG and PG courses. Further to investigate the relationship between Cognitive and Literacy. For the study, the researcher adopted a descriptive research design, wherein the data was collected from 416 students perusing Schools in the Chennai district. The researcher adopted a simple random sampling technique. Herein the data was collected using a structured questionnaire. From the analysis performed it was understood that an equal proportion of male and female respondents were considered for the study. For the study 217 UG students and 199 students were considered. It can be interpreted that Learning attitude, Re-Thinking and Information are the important Cognitive characteristics exhibited by the students. Also, it was found that Word reading ability, Spelling and Structuring are the important literary characteristics exhibited by the students. Through the study, it was found that there is a 72.1% positive relationship between Cognitive and literacy. Furthermore, it was identified that the Cognitive of the students influences their literacy.

Keywords: Cognitive, Literacy, Students

Introduction

The majority of research on education and its impact on cognitive ability is based on three main types of tasks: standardised intelligence tests; tasks derived from laboratory studies; and the tasks themselves. Despite significant differences in the types of tasks used, the cultures examined, and the children sampled, a strong correlation between education and cognitive ability has been found. It has been demonstrated that schooled kids perform similarly across cultures, but that schooled and unschooled kids perform qualitatively and quantitatively differently within the same culture. According to one group of researchers, when kids don't go to school, their cognitive structures and functions either develop slowly or not at all (Ganguli, M., Dube, S., Johnston, J. M., Pandav, R., Chandra, V., & Dodge, H. H., 1999).

Education is linked to improved performance on intellectual tasks, decreased performance variability within groups, and increased performance differentiation within the child. Exposure to formal educational experiences results in the ability to abstract and generalise as well as the logical expressions that Piaget identified as the last stage of formal operational thought (Ganguli, M., et. al., 1995).

What about education promotes the growth of generalising and abstract thinking skills? According to Bruner (1966), the use of written language in schools promotes linguistic proficiency and, by extension, all symbolic functions. The

structure of the written language used in schools makes it easier to generalise from specific situations and abstract ideas. Numerous studies have found a link between exposure to written texts used in schools and the ability to reason logically (Lynn, R., & Yadav, P., 2015).

Review of Literature

Writing results in a decontextualized experience where the main focus is on universalistic values, criteria, and performance standards. If reading written material improves one's linguistic and logical skills, literate people who are exposed to it should exhibit higher-order and more generalised mental abilities (Cole, S. A., Sampson, T. A., & Zia, B. H., 2009). Although education and literacy are not the same, if we assume that their effects on cognitive abilities are similar, then the research by Gole and Scribner on the Vai is pertinent.

The aforementioned points of view are not supported by research examining the variations in performance characteristics between literate and illiterate individuals (Gaurav, S., & Singh, A., 2012). Today the technological improvements in the digital media (Saravanan V., Sumathi A., 2012), wireless networks (Sumathi A., Saravanan V., 2015), and other technical things helps the students and teachers directly and indirectly in the teaching and learning process. Moreover, the health (Vinit Kumar Gunjan., et. al., 2022) of the teachers and students can be managed efficiently with the help of technical improvements in the field of computation and networks (Shakir Khan., et. al., 2022).

Studies on the effects of education note that, in addition to the reading and writing activities related to written language, education offers the chance "to treat individual learning problems as instances of general classes of problems (Pandav, R., Dodge, H. H., DeKosky, S. T., & Ganguli, M., 2003). This implies the need to evaluate literacy programmes separately from the effects of education. In other words, a comparison of literates and illiterates may not show the generalised cognitive abilities that are thought to result from education (Das, J. P., & Dash, U. N., 1989).

Objectives

The objective of the study was to identify the important Cognitive and Literacy characteristics exhibited by the students perusing schools in Chennai District. Further to investigate the relationship between Cognitive and Literacy.

Methodology

For the study, the researcher adopted a descriptive research design, wherein the data was collected from 416 students perusing schools in the Chennai district. The researcher adopted a simple random sampling technique. Herein the data was collected using a structured questionnaire.

Analysis and Interpretation

Herein analysis was carried out to identify the demographic profile of the respondents considered for the study.

Table No. 1: Percentage Analysis – Demographic Profile

		Frequency	Percent
Gender	Male	208	50.0
	Female	208	50.0
	Total	416	100.0
Graduation	UG	217	52.2
	PG	199	47.8
	Total	416	100.0

Source: (Primary data)

From the percentage, analysis performed it can be interpreted that an equal proportion of male and female respondents were considered for the study. For the study 217 UG students and 199 students were considered.

Table No. 2: Rank analysis – Cognitive

Descriptive Statistics			
	N	Mean	Rank
Information	416	4.1178	3
Learning Attitude	416	4.1851	1
Intellectuality	416	4.0745	4
Applied Knowledge	416	4.0264	5
Re-Thinking	416	4.1563	2

Source: (Primary data)

From the rank analysis made using the mean score it can be interpreted that Learning attitude, Re-Thinking and Information are the important Cognitive characteristics exhibited by the students.

Table No. 2: Rank analysis – Literacy

Descriptive Statistics			
	N	Mean	Rank
Comprehension	416	4.0841	5
Vocabulary	416	4.1130	4
Word Reading ability	416	4.1755	1
Structuring	416	4.1370	3
Spelling	416	4.1683	2

Source: (Primary data)

From the rank analysis made using the mean score, it can be interrupted that Word reading ability, Spelling and Structuring are the important literary characteristics exhibited by the students.

Table No. 3: Regression Analysis – Impact of Cognitive on Literacy

Model Summary						
Model	R	R Square	Adjusted R Square		Std. Error of the Estimate	
1	.721 ^a	.520	.519		.51164	
a. Predictors: (Constant), Cognitive						
ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	117.578	1	117.578	449.154	.000 ^b
	Residual	108.375	414	.262		
	Total	225.953	415			
a. Dependent Variable: Literacy						
b. Predictors: (Constant), Cognitive						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.384	.132		10.461	.000
	Cognitive	.669	.032	.721	21.193	.000
a. Dependent Variable: Literacy						

Source: (Primary data)

From the R-value estimated (0.721), it can be interpreted that there is a 72.1% positive relationship between Cognitive and literacy. Further, the R-Square value calculated was (0.520), meaning the forecasting accuracy of the regression equation is 52%. The ANOVA significance value calculates was less than 0.05, meaning the model is fit. Further, the coefficient significance value is lesser than 0.05, meaning the Cognitive of the students' influences their literacy.

Findings and Conclusion

From the analysis performed it was understood that an equal proportion of male and female respondents were considered for the study. For the study 217 UG students and 199 students were considered. It can be interpreted that Learning attitude, Re-Thinking and Information are the important Cognitive characteristics exhibited by the students. Also, it was found that Word reading ability, Spelling and Structuring are the important literary characteristics exhibited by the students. Through the study, it was found that there is a 72.1% positive relationship between Cognitive and literacy. Furthermore, it was identified that the Cognitive of the students influences their literacy.

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