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Original Research Article

Exploring study skills and learning approaches among high school students in the Southern Karnataka region

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ABSTRACT

Background: Education is a fundamental right, and effective study skills are vital for academic success. Key skills include textbook reading, note-taking, concentration, test preparation, memory, and time management. This study aimed to assess study skills among high school students and examine their relationship with academic performance.
Methods: A cross-sectional study was conducted between December 2022 and May 2023 among high school students in Mysuru and Chamarajanagar to assess study skills and learning strategies. A sample of 382 students was selected using probability proportionate to size sampling. Data were collected using a pre-tested questionnaire, including socio-demographics, academic performance, and the Dennis Congos study skills inventory (DCSSI), covering six domains: textbook reading, note-taking, memory, test preparation, concentration, and time management. Domain-specific thresholds identified areas needing improvement. Data analysis was done using SPSS v24 with descriptive and inferential statistics. Ethical approval and informed consent were obtained.
Results: Among 382 high school students, most were aged 14-15 years (65.1%) and belonged to the upper-middle socioeconomic class (58.3%). Academic performance showed that 62.9% scored between 61-80%, while only 6% achieved scores above 90%. Students demonstrated strengths in test preparation (98.4%), concentration (66.8%), time management (54.7%), and textbook reading (58.1%), but showed deficits in note-taking (19.6%) and memory skills (12.6%). Textbook reading was significantly associated with academic performance (p=0.005), while time management approached significance (p=0.063).
Conclusions: Study highlighted that textbook reading impacts performance; note-taking and memory need improvement.

Keywords: Academic performance, High school students, Study skills, Textbook reading strategies

INTRODUCTION

The right to education is a crucial basic human entitlement. Education encompasses the process of individuals gaining essential knowledge, skills, abilities, values, and attitudes. Study techniques or study strategies are various approaches employed during the learning process. They encompass a wide range of skills related to organizing and assimilating new material, retaining information, and dealing with exams.[1] UNICEF's MICS6 data reveals a global learning crisis, especially among marginalized children. Across 35 countries, only 41% have basic reading skills and 25% math proficiency, with a median 2% gender gap in foundational reading abilities.[2] The National Achievement Survey (2021) assessed learning across Indian schools. Karnataka's literacy rate is 75.6%, slightly above the national average of 74%, but some districts, as per NSDC-IMaCS reports,

lag at 70.08%.[3] Developing good study skills is essential for success in academics and can greatly improve learning outcomes. Reading textbooks, taking notes, concentration, preparing for tests, memory, and time management are the key factors of effective study skills.[4] Academic skills refer to the qualities and learning methods that enhance one's academic performance. Strong academic achievement indicates that students possess unique abilities.[5] Everyone experiences difficulties with studying at one time or another, and overcoming these challenges is all part of learning, particularly when you have a large workload. Such issues range from temporary to chronic lack of motivation and low productivity. It can take what feels like extraordinary willpower to overcome these issues, but the important thing to remember is that they can be conquered with the right attitude. These skills encompass effective note-taking methods, strategies for reading and maintaining concentration, as well as mnemonic devices that assist in remembering lists of information.[6] Hence, the purpose of this research was to assess the study skills and also compare the study skills strategies of high school students with their academic performance.

METHODS

A cross-sectional study was conducted over six months (1st December 2022 to 31st May 2023) to assess study skills and learning strategies among high school students located in the districts of Mysuru and Chamarajanagar, Karnataka, India. Participants who were studying in selected high schools and also willing to give informed assent as well as consent from parents were included. The sample size was determined using a single proportion formula, assuming a prevalence of good study skills of 45.7%, as reported by Kumar et al, with a margin of error of 5% and a 95% confidence level, resulting in a required minimum sample size of 382 students.[7] A probability proportionate to size (PPS) sampling technique was utilized to collect the data and it was carried out using a pre-tested, semi-structured questionnaire, which has 2 sections in section 1, socio-demographic information of the participants and academic performance of the students as the percentage of marks obtained in their most recent final examination. The other section, included the Dennis Congos study skills inventory (DCSSI), a validated tool that evaluates six key domains of study behavior: textbook reading, note-taking, memory, test preparation, concentration, and time management.[8] Each domain consists of multiple items rated on a five-point Likert scale, assessing behaviors such as use of structured reading methods, summarization and review of lecture notes, utilization of mnemonic aids, collaborative study, management of distractions, and scheduling of academic tasks. The effectiveness of study skills was assessed using domain-specific score thresholds. A textbook reading score below 30 suggests the need to enhance reading strategies for improved academic outcomes. A note-taking score below 20 indicates the necessity to strengthen the ability to record and review key information effectively. Similarly, a memory score below 30, test preparation scores below 40, concentration score below 35, and time management score below 20 reflect areas requiring targeted improvement. Enhancing skills in these domains is likely to contribute to better academic performance and overall learning effectiveness among high school students. The data collected were entered in MS Excel and analyzed using SPSS version 24, employing descriptive statistics (mean, percentage, standard deviation) and inferential tests like the Chi-square test. Ethical clearance was obtained from the JSS Medical College Ethics Committee, and informed consent was secured from participants before data collection.

RESULTS

Among the 382 high school students who participated in the study, the majority (65.1%) were between 14 and 15 years of age, while 29.5% were aged 12 to 13 years, indicating that most were in early to mid-adolescence. Female students slightly outnumbered males, with 198 females (51.8%) and 184 males (48.2%). In terms of religion, a significant majority identified as Hindu (90%), followed by Muslims (6.8%) and Christians (3.15%), reflecting the predominant religious demographics of the region. Socioeconomic classification based on the Modified BG Prasad Scale revealed that most students belonged to the upper-middle class (58.3%), followed by the middle class (24.6%). A smaller proportion were from upper class (7.85%), lower-middle class (7.59%), and lower-class backgrounds (1.57%), suggesting that the sample primarily comprised students from relatively stable socio-economic settings (Table 1).

Table 1: Socio-demographic characteristics of high school students in Mysuru and Chamarajanagar (n=382).

Socio-demographic variables	Category	Frequency (%)
Age (years)	12 to 13	133 (29.5)
	14 to 15	249 (65.1)
Gender	Male	184 (58.6)
	Female	198 (68.6)
Religion	Hindu	344 (90)
	Muslim	26 (6.8)
	Christian	12 (3.15)
Socioeconomic status	Upper class	30 (7.85)
	Upper-middle class	223 (58.3)
	Middle class	94 (24.6)
	Lower-middle class	29 (7.59)
	Lower class	6 (1.57)

The academic performance of the participants, as illustrated in the bar chart, shows that the majority of students scored between 71-80% (32.5%), followed closely by 30.4% of students scoring between 61-70%. A

smaller proportion, 23%, achieved scores in the 81-90% range. Only 8.1% of students scored in the 50-60% range, while the highest performance category (91-100%) was achieved by just 6% of the participants. This distribution indicates that most students performed within the moderate academic range (61-80%), with relatively few students at either the lowest or highest ends of the performance spectrum (Figure 1).

Among the participants, the majority of students demonstrated good skills in test preparation (98.4%), concentration (66.8%), time management (54.7%), and textbook reading (58.1%). However, a notably low percentage of students exhibited good skills in note-taking (19.6%) and memory (12.6%), indicating these as key areas of concern. In contrast, a substantial proportion of students had poor note-taking skills (80.4%) and poor memory skills (87.4%), suggesting the need for targeted interventions to strengthen these competencies. Overall, while students showed strengths in preparation and concentration, there are clear deficits in memory and note-taking skills that could impact academic performance if not addressed (Table 2).

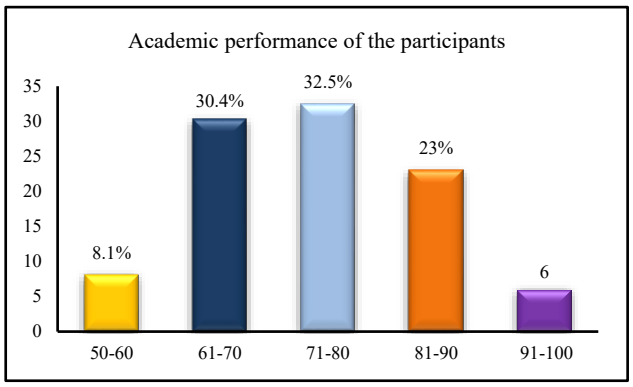

Figure 1: Academic performance distribution among high school students in Mysuru and Chamarajanagar (n=382).

Table 2: Distribution of study skills among high school students Mysuru and Chamarajanagar (n=382).

Study skills	Category (%)		Total (%)
	Good	Poor	
Textbook reading	222 (58.1)	160 (41.9)	382 (100)
Note taking skills	75 (19.6)	307 (80.4)	382 (100)
Memory skills	48 (12.6)	334 (87.4)	382 (100)
Test preparation	376 (98.4)	6 (1.6)	382 (100)
Concentration skills	255 (66.8)	127 (33.2)	382 (100)
Time management	209 (54.7)	173 (45.3)	382 (100)

Table 3: Association of study skills with academic performance among high school students in Mysuru and Chamarajanagar (n=382).

Study skills	Category	Academic performance					Total (%)	χ^2	df	P value
		50-60 (%)	61-70 (%)	71-80 (%)	81-90 (%)	91-100 (%)				
Textbook reading	Good	16 (7.2)	81 (36.5)	74 (33.3)	42 (18.9)	9 (4.1)	222 (100)	14.51	4	0.005
	Poor	15 (9.4)	35 (21.9)	50 (31.3)	46 (28.8)	14 (8.8)	160 (100)			
Note taking skills	Good	3 (4.0)	25 (33.3)	21 (28.0)	19 (25.3)	7 (9.3)	75 (100)	4.704	4	0.319
	Poor	28 (9.1)	91 (29.6)	103 (33.6)	69 (22.5)	16 (5.2)	307 (100)			
Memory skills	Good	5 (10.4)	15 (31.3)	13 (27.1)	12 (25.0)	3 (6.3)	48 (100)	0.958	4	0.916
	Poor	26 (7.8)	101 (30.2)	111 (33.2)	76 (22.8)	20 (6.0)	334 (100)			
Test preparation	Good	30 (8.0)	112 (29.8)	124 (33)	87 (23.1)	23 (6.1)	376 (100)	5.648	4	0.197
	Poor	1 (16.7)	4 (66.7)	0 (0)	1 (16.7)	0 (0)	6 (100)			
Concentration skills	Good	20 (7.8)	82 (32.2)	85 (33.3)	55 (21.6)	13 (5.1)	255 (100)	2.862	4	0.581
	Poor	11 (8.7)	34 (26.8)	39 (30.7)	33 (26.0)	10 (7.9)	127 (100)			
Time management	Good	13 (6.2)	76 (36.4)	63 (30.1)	46 (22.0)	11 (5.3)	209 (100)	8.923	4	0.063
	Poor	18 (10.4)	40 (23.1)	61 (35.3)	42 (24.3)	12 (6.9)	173 (100)			

The study also revealed that among all the study skills assessed, textbook reading skills showed a statistically significant association with academic performance (p=0.005). Students with good textbook reading skills had better academic outcomes, with a higher percentage (18.9%) scoring in the 81-90% range compared to those with poor textbook reading habits. While other study skills, such as note-taking, memory, test preparation,

concentration, and time management, did not show statistically significant associations. Especially, time management skills approached significance (p=0.063), indicating a potential trend toward improved academic outcomes. These findings underscore the critical role of effective textbook reading strategies in enhancing academic performance among high school students (Table 3).

DISCUSSION

Most participants (65.1%) were aged 14-15 years, consistent with findings by Singh et al and Daliya and Bhogle, who observed that adolescents in this age group begin developing structured cognitive strategies and time management skills.[9,10] Females slightly more than males (51.8% versus 48.2%), in line with studies by Rani et al and Tripathi and Kumar, which found gender differences in learning preferences- particularly, girls favouring kinesthetic and reading/writing approaches.[11,12] The majority of participants were Hindu (90%), reflecting regional demographics; however, research by Ansari and Khan and Shaik and Bano suggested that religious influences may subtly shape study habits through familial and cultural expectations.[13,14] Concerning socioeconomic status, most participants belonged to the upper-middle class (58.3%), aligning with studies by Sharma and Sahu, Rani, and Bhuvaneswari and Arulmani, which indicate that students from higher SES backgrounds generally have access to better resources and employ more effective learning strategies.[11,15,16] The present study found that most high school students scored between 71-80% (32.5%) and 61-70% (30.4%), with fewer achieving 81-90% (23%) and only 6% scoring 91-100%. This aligns with Singh et al and Daliya and Bhogle, who reported similar patterns, attributing moderate performance to basic study strategies and exam stress.[9,10] while Rajput and Tiwari highlighted the role of emotional intelligence and stress management in achieving top academic scores, reinforcing the need for holistic learning approaches.[17] The present study found a significant association between textbook reading skills and academic performance (p=0.005), with 18.9% of students scoring in the 81-90% range. This aligns with Singh et al, Kumari and Rani, who reported that structured reading enhances comprehension and academic outcomes.[9,18] One of the studies done by Prasad and Kumar also found that self-regulated time management practices, such as setting study schedules and prioritizing tasks were positively associated with academic performance among high school students in Hyderabad.[19] Other skills like note-taking, memory, and test preparation were not significantly linked to achievement, supporting a study finding done by Anitha and Thomas emphasizing quality over frequency of use.[20]

The cross-sectional and self-reported nature of this study limits causal interpretation and may introduce response bias. Academic scores reflect only one exam, and the restricted study area, along with unmeasured factors like home environment and parental support, may limit generalizability.

CONCLUSION

The study highlighted that textbook reading skills significantly influence academic performance among high school students in Southern Karnataka. While students excelled in test preparation and concentration, deficits in note-taking and memory skills remain concerning. Strengthening textbook reading strategies and enhancing time management may further improve students' academic success.

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Ethical approval: The study was approved by the Institutional Ethics Committee JSS Medical College, JSSAHER, Mysuru

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