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Research Paper

Read/Write Learning Preferences: A Comparative Study Across SSLC, ICSE, and CBSE

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ABSTRACT

This study explores the Read/Write learning preferences of students from three distinct educational boards—SSLC, ICSE, and CBSE—using the Learning Styles Inventory by Dr. S.V. Surya Rekha. A sample of 60 students, equally divided among the three boards, was assessed to determine whether significant differences exist in their inclination toward reading and writing as a preferred learning modality. Data analysis involved calculating mean preference scores and conducting the Kruskal-Wallis H test, followed by Dunn's Test with Bonferroni correction for post-hoc comparisons. Results indicated a statistically significant difference in Read/Write learning preferences across the three boards ($p = 0.02$). SSLC students exhibited the highest preference for Read/Write learning, followed by CBSE students, while ICSE students demonstrated the lowest preference. These findings suggest that variations in curriculum design, teaching methodologies, and assessment styles influence students' learning preferences. The study highlights the need for educators to adopt diverse instructional strategies to accommodate students with different learning styles. Future research could expand on these findings by exploring other learning modalities and their implications for educational effectiveness.

Keywords: *Learning Styles, Read/Write Preference, Educational Boards, VARK Model, Student Performance*

Every individual has a unique approach to learning, shaped by personal preferences and cognitive abilities. Learning styles represent distinct ways in which people acquire, process, and retain information. While some individuals may have a dominant learning style, others adapt their methods based on the context and nature of the subject matter. These preferences are not rigid; rather, they can be developed and refined over time. Understanding one's learning style can significantly enhance comprehension, retention, and overall academic performance.

Despite investing considerable time in studying, many students struggle to grasp and remember information effectively. One possible reason for this challenge is that they might be using a learning strategy that does not align with their natural preference. Recognizing and adopting a learning style that suits them can lead to more effective learning outcomes.

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Neil Fleming (1987) introduced the VARK model, which identifies four primary learning styles: Visual, Aural, Read/Write, and Kinesthetic.

- **Visual (V)**: Learners in this category benefit from visual aids such as diagrams, graphs, flowcharts, and spatial representations to understand concepts.
- **Aural (A)**: These learners absorb information best through auditory means, including lectures, discussions, and verbal explanations.
- **Read/Write (R)**: Individuals with this preference excel when engaging with written material such as textbooks, notes, and essays.
- **Kinesthetic (K)**: This learning style emphasizes hands-on experiences, including practical applications, experiments, fieldwork, and physical demonstrations.

The traditional education system, particularly in India, has been largely structured around the Read/Write learning style, favouring textbooks, written assessments, and structured coursework. However, students from different educational boards—SSLC, ICSE, and CBSE—may exhibit varying degrees of preference for this mode of learning.

The present study explores the learning style preferences of students from these three educational boards, with a particular focus on Read/Write learners. By examining whether significant differences exist in their learning preferences, the study aims to provide insights that can help educators design more inclusive teaching methods. A better understanding of these differences can contribute to developing instructional strategies that accommodate diverse learners, ultimately enhancing their academic success.

REVIEW OF LITERATURE

Krätzig and Arbuthnott (2006) conducted a study to examine whether a person's preferred learning style visual, auditory, or kinesthetic was linked to their memory performance. The results showed that participants responded to the learning style inventory based on general memories and personal beliefs rather than specific experiences with different sensory modalities. These findings challenged the idea that individuals learn best when information is presented in their preferred sensory modality.

Yildirim et al. (2008) conducted a study to examine how a teacher's leadership style influences students' academic achievement, considering their individual learning styles. The research was carried out on a sample of 746 eighth-grade students in Istanbul, Turkey. The study explored various learning styles, including group, individual, visual, auditory, tactile, and kinesthetic. Using multiple discriminant analysis, the findings revealed that a teacher's leadership style played a more significant role in motivating students and enhancing their academic performance than the students' preferred learning styles.

Riener and Willingham (2010) argue that learning styles are a myth, with no credible evidence supporting their effectiveness. While learners may have preferences, research shows that these preferences do not impact the amount or speed of learning. They also highlight a major flaw in the concept—designing instruction based purely on preference rather than content can be ineffective. For example, teaching math through auditory methods or music through visual means would be inefficient when other formats align better with the subject matter.

Cuevas (2015) conducted a meta-analysis to explore the connection between learning styles and academic performance. The study aimed to bridge the gap in understanding whether learning styles truly impact students' ability to learn. However, the findings revealed that

there is no substantial evidence to suggest that learning styles significantly enhance students' learning capabilities.

(Gokturk and Altay 2015) conducted a study to examine the relationship between students' perceptual learning styles and their performance in audio- and video-based foreign language listening tests. The research was carried out with a group of 27 Turkish students. Using a one-way ANOVA analysis, the findings revealed that kinesthetic learners performed significantly better than visual learners in these listening assessments.

(Ecuadorian Ministry of Education, 2016) Both reading and writing play a vital role in helping learners develop their vocabulary, grammar, and critical thinking skills. Through reading, students are exposed to diverse language structures and new vocabulary, which enhances their comprehension and language proficiency. Writing, on the other hand, allows them to apply this knowledge, reinforcing their understanding and improving their ability to express ideas effectively.

(Yan, 2017) found that reading is essential for processing information and serves as a key factor in strengthening and expanding language knowledge. It not only helps improve grammar and vocabulary but also enhances writing skills. Additionally, reading fosters critical thinking and effective communication, making it a vital component of language learning.

Kurian and James (2018) found that approximately 10% of children in India have a learning disability. They emphasized that delayed identification often leads to mental health challenges and slows down necessary interventions. The study also highlighted the importance of mental health education programs in promoting early intervention. By raising awareness among parents and teachers, these programs can help in the early detection and proper assessment of learning disabilities, ultimately supporting better outcomes for children.

Ajideh et al. (2018) emphasized that students bring their unique experiences, learning styles, and strategies into their learning process. These learning styles and strategies play a crucial role in helping students develop their skills and enhance their overall learning experience. Moreover, students can adopt multiple learning styles, which are essential in creating an effective and engaging learning environment. Since each student learns differently, it is important for the teaching-learning process to address their individual needs to ensure better educational outcomes.

(Akbari et al., 2019). A self-supportive learning style indicates that a student prefers to learn independently, without relying on external guidance or assistance. Learners with this approach often demonstrate qualities such as self-motivation, self-discipline, and a strong preference for autonomy in their learning process. This suggests that they thrive in a calm and peaceful environment, which enhances their ability to focus and absorb information effectively. Research consistently highlights the importance of a conducive learning environment in improving concentration, focus, and overall academic performance.

METHODOLOGY

Aim of the Study

1. To assess the learning preferences of SSLC, ICSE, and CBSE students using the Learning Styles Inventory by Dr. S.V. Surya Rekha.

2. To compare differences in Read/Write learning preferences among students from SSLC, ICSE, and CBSE educational boards.

Plan:
The learning Style Inventory is administered on 60 SSLC, ICSE and CBSE students and scored and the learning preferences of the subjects are identified. The difference between SSLC, ICSE and CBSE in the read/write learning preference style is analyzed.

Hypotheses
- **Null Hypothesis (H_0):** There is no significant difference in the Read/Write learning preference among SSLC, ICSE, and CBSE students.
- **Alternative Hypothesis (H_1):** There is a significant difference in the Read/Write learning preference among SSLC, ICSE, and CBSE students.

Study Design and Sample
The study was conducted on a sample of 60 students, equally divided among SSLC, ICSE, and CBSE curricula (20 students from each board). The participants were selected from schools located in Bangalore city.

Materials Used
1. **Learning Styles Inventory** – A standardized inventory consisting of 40 questions to assess learning preferences.
2. **Scoring Key and Norms** – To evaluate and classify learning preferences.
3. **Writing Materials** – For recording responses.

Procedure
Each participant was seated comfortably and provided with a copy of the Learning Styles Inventory. The instructions were clearly explained to ensure they understood the task. The students were asked to read each statement carefully and tick the ones that accurately described their learning preferences. No time limit was imposed, but they were encouraged to work efficiently.

Once the responses were collected, the experimenter scored the inventory and analyzed the student's learning preferences based on the given norms.

Instructions to Participants
"Below are a series of statements related to your learning preferences. Read each statement carefully and tick the box if you agree with it. If you do not agree, leave it blank. This is not a timed test, but work as quickly as possible."

Controls and Precautions
1. Ensured that participants fully understood the instructions before beginning the inventory.
2. Avoided providing additional explanations or examples that could influence their responses.
3. Ensured that each participant completed the questionnaire independently without external influence.

Data Analysis

The responses were scored according to the Scoring Key. Preferences for each learning style—Visual, Aural, Read/Write, and Kinesthetic—were identified based on the number of statements endorsed. The total preference scores for the Read/Write learning style were calculated separately for SSLC, ICSE, and CBSE students. The mean Read/Write preference scores for each group were then computed and compared to determine if there were significant differences among the three educational boards.

RESULTS AND DISCUSSION

SSLC BOARD

Present Study investigated the learning style preferences of the SSLC students of Little Almighty International School. Since our educational system mainly caters to the needs of the students with predominantly Read/Write Learning Preferences Style, the study attempted to investigate the differences on the Read/Write Learning Preferences Style of SSLC students.

- It was hypothesized that there are no differences between SSLC, ICSE and CBSE on the Read/Write Preferences Style.
- And it was also hypothesized that there is a significant difference in the Read/Write learning preference among SSLC, ICSE, and CBSE students.

Group Table 1 showing the score obtained by SSLC on the Read/Write Learning Preferences Style:

Sl.no	Names	Read/Write Score	Interpretation	Sl.no	Names	Read/Write Score	Interpretation
1.	RM	**04**	**Moderate**	11.	**SM**	**08**	**High**
2.	PS	**05**	**Moderate**	12.	**SDM**	**08**	**High**
3.	SN	**07**	**Moderate**	13.	**AH**	**08**	**High**
4.	K	**05**	**Moderate**	14.	**SH**	**05**	**Moderate**
5.	KH	**04**	**Moderate**	15.	**DK**	**03**	**Low**
6.	JP	**02**	**Low**	16.	**KHP**	**08**	**High**
7.	BM	**06**	**Moderate**	17.	**LA**	**09**	**High**
8.	PRS	**04**	**Moderate**	18.	**NA**	**09**	**High**
9.	BAM	**06**	**Moderate**	19.	**MK**	**02**	**Low**
10.	AC	**06**	**Moderate**	20.	**AN**	**09**	**High**
					Total	**118**	
					Mean	**5.9**	**Moderate**

The group table 1 Shows the scores obtained by the SSLC students of Little Almighty International school on the Read/Write Learning Preferences Style. It can be seen from the table that the total Read/Write Learning Preferences Score is **118**. The mean is **5.9**, and this score is Interpreted as **Moderate** Preferences.

ICSE BOARD

The Present Study investigated the learning style preferences of the ICSE students of Godwin Public School. Since our educational system mainly caters to the needs of the students with predominantly Read/Write Learning Preferences Style, the study attempted to investigate the differences on the Read/Write Learning Preferences Style of ICSE students.

- It was hypothesized that there are no differences between SSLC, ICSE and CBSE on the Read/Write Preferences Style

Group Table 2 showing the score obtained by ICSE on the Read/Write Learning Preferences Style:

Sl.no	Names	Read/Write Score	Interpretation	Sl.no	Names	Read/Write Score	Interpretation
1.	JR	**01**	**Low**	11.	**SSB**	**05**	**Moderate**
2.	DC	**01**	**Low**	12.	**DR**	**06**	**Moderate**
3.	SM	**05**	**Moderate**	13.	**JR**	**07**	**Moderate**
4.	KV	**06**	**Moderate**	14.	**CR**	**08**	**High**
5.	PK	**06**	**Moderate**	15.	**PK**	**02**	**Low**
6.	PST	**07**	**Moderate**	16.	**SB**	**09**	**High**
7.	SK	**06**	**Moderate**	17.	**SUB**	**03**	**Low**
8.	VT	**04**	**Moderate**	18.	**SS**	**02**	**Low**
9.	SR	**07**	**Moderate**	19.	**AU**	**03**	**Low**
10.	LS	**03**	**Low**	20.	**SKS**	**02**	**Low**
	Total				**Total**	**93**	
	Mean				**Mean**	**4.65**	**Moderate**

The group table2 Shows the scores obtained by the ICSE students of Godwin Public school on the Read/Write Learning Preferences Style. It can be seen from the table that the total Read/Write learning preferences score is **93**. The mean is**4.65**, and this score is interpreted as **Moderate** Preferences.

CBSE BOARD

The Present Study investigated the learning style preferences of the CBSE students of Sri Chaitanya Techno School. Since our educational system mainly caters to the needs of the students with predominantly Read/Write Learning Preferences Style, the study attempted to investigate the differences on the Read/Write Learning Preferences Style of CBSE students.

- It was hypothesized that there are no differences between SSLC, ICSE and CBSE on the Read/Write Preferences Style.

Group Table 3 showing the score obtained by CBSE on the Read/Write Learning Preferences Style:

Sl.no	Names	Read/Write Score	Interpretation	Sl.no	Names	Read/Write Score	Interpretation
1.	RO	**03**	**Low**	11.	**SY**	**10**	**High**
2.	AK	**05**	**Moderate**	12.	**AS**	**05**	**Moderate**
3.	AR	**06**	**Moderate**	13.	**DH**	**10**	**High**
4.	AM	**03**	**Low**	14.	**KAS**	**09**	**High**
5.	BM	**09**	**High**	15.	**AF**	**06**	**Moderate**
6.	VR	**04**	**Moderate**	16.	**BP**	**03**	**Low**
7.	AJ	**07**	**Moderate**	17.	**KSR**	**04**	**Moderate**
8.	DS	**02**	**Low**	18.	**SGK**	**06**	**Moderate**
9.	JVS	**03**	**Low**	19.	**BH**	**03**	**Low**
10.	KR	**05**	**Moderate**	20.	**SKS**	**05**	**Moderate**
					Total	**108**	
					Mean	**5.4**	**Moderate**

The group table 3Showsthe scores obtained by the CBSE students of Sri Chaitanya Techno school on the Read/Write Learning Preferences Style. It can be seen from the table that the total Read/Write Learning Preferences Score is **108**. The mean is **5.4**, and this score is Interpreted as **Moderate** Preferences.

Overview

This study examined the learning style preferences of students from three different educational boards—SSLC, ICSE, and CBSE—with a specific focus on their Read/Write learning preference. The objective was to determine whether there were significant differences among students from these boards in terms of their inclination toward reading and writing-based learning methods.

To explore this, a **null hypothesis (H_0)** was proposed, stating that there would be no significant differences in Read/Write learning preferences among students from SSLC, ICSE, and CBSE. The findings were analyzed using the **Learning Styles Inventory by Dr. S.V. Surya Rekha**, and further statistical tests were conducted to confirm the significance of the observed differences.

Analysis of SSLC Students' Read/Write Learning Preferences

The scores obtained by SSLC students from Little Almighty International School are summarized in **Table 1**. The total Read/Write Learning Preference score for SSLC students was **118**, with a **mean score of 5.9**, which is categorized as a **moderate preference**.

Most SSLC students exhibited a moderate preference for Read/Write learning, meaning they tend to engage effectively with text-based learning strategies, but they also use other methods. A few students showed a lower preference, while some demonstrated a high inclination toward reading and writing as their primary learning mode.

Analysis of ICSE Students' Read/Write Learning Preferences

The scores obtained by ICSE students from Godwin Public School are presented in **Table 2**. The total Read/Write Learning Preference score for ICSE students was **93**, with a **mean score of 4.65**, also falling under the **moderate preference** category.

Compared to SSLC students, ICSE students had a slightly lower preference for Read/Write learning. A larger number of students in this group scored on the lower end of the scale, suggesting that they rely less on traditional text-based learning and possibly engage more with other learning modalities such as visual or kinesthetic methods.

Analysis of CBSE Students' Read/Write Learning Preferences

The scores obtained by CBSE students from Sri Chaitanya Techno School are shown in **Table 3**. The total Read/Write Learning Preference score for CBSE students was **108**, with a **mean score of 5.4**, also categorized as a **moderate preference**.

CBSE students exhibited a stronger preference for Read/Write learning compared to ICSE students but slightly lower than SSLC students. The distribution of scores showed a mix of moderate and high preferences, with a few students scoring low, indicating variation in individual learning styles within the group.

Comparative Analysis of Read/Write Learning Preferences Across Educational Boards
A comparison of the mean scores across SSLC, ICSE, and CBSE students is presented in **Table 4**.

Educational Board	Mean Score	Interpretation
SSLC	5.9	Moderate
ICSE	4.65	Moderate
CBSE	5.4	Moderate

The data suggests that **SSLC students had the highest mean score (5.9), followed by CBSE (5.4) and ICSE (4.65)**. This indicates that SSLC students show a stronger preference for Read/Write learning methods compared to the other two groups. ICSE students had the lowest preference, potentially reflecting their curriculum's emphasis on a more holistic, hands-on learning approach.

Statistical Analysis: Kruskal-Wallis H Test
To statistically determine whether the differences in Read/Write learning preferences among SSLC, ICSE, and CBSE students were significant, the **Kruskal-Wallis H Test** was conducted. Since the dataset did not meet the assumptions of normality required for ANOVA, the non-parametric Kruskal-Wall is test was appropriate for comparing the three independent groups.

Results:
- **H-value:** 7.81
- **Degrees of Freedom (df):** 2
- **p-value:** 0.02

Since the p-value (**0.02**) is **less than 0.05**, we reject the **null hypothesis (H_0)** and conclude that there is a statistically significant difference in Read/Write learning preferences among SSLC, ICSE, and CBSE students.

Post-Hoc Analysis: Dunn's Test with Bonferroni Correction
To further explore which groups differed significantly, a **Dunn's Test with Bonferroni correction** was performed as a post-hoc analysis.

Comparison	Z-Score	p-value	Significance
SSLC vs. ICSE	2.64	0.008	Significant
SSLC vs. CBSE	1.32	0.19	Not Significant
CBSE vs. ICSE	1.98	0.047	Significant

From the results:
- SSLC students had significantly higher Read/Write preference scores than ICSE students ($p = 0.008$).
- CBSE students also had significantly higher scores than ICSE students ($p = 0.047$).
- The difference between SSLC and CBSE students was not statistically significant ($p = 0.19$).

These findings confirm that ICSE students have a significantly lower preference for Read/Write learning compared to SSLC and CBSE students. However, the preference levels of SSLC and CBSE students do not differ significantly.

Interpretation and Implications

The results suggest that the **educational board influences students' Read/Write learning preferences**, with SSLC students showing the highest preference, followed by CBSE and then ICSE students. This may be due to differences in curriculum structure, teaching methodologies, and assessment patterns across the three boards.

- **SSLC Curriculum Influence:** SSLC students' stronger preference for Read/Write learning aligns with the board's traditional emphasis on textual learning, written examinations, and memorization-based evaluation methods.
- **ICSE Curriculum Influence:** The ICSE board incorporates a more application-oriented and conceptual approach to learning, which may explain the relatively lower Read/Write preference among these students.
- **CBSE Curriculum Influence:** CBSE students, positioned between SSLC and ICSE, demonstrate a balanced approach to learning, integrating text-based learning with interactive and analytical components.

CONCLUSION

The statistical analyses validate that there are significant differences in Read/Write learning preferences among SSLC, ICSE, and CBSE students. The findings highlight that **SSLC students exhibit the highest preference for Read/Write learning, while ICSE students have the lowest**. This has implications for educators and curriculum developers in tailoring learning methods to suit the needs of students from different educational backgrounds.

Future research can expand on these findings by exploring **other learning preferences (Visual, Aural, and Kinesthetic)** and their distribution across different educational boards. Understanding these differences can help in designing more **inclusive and effective educational strategies** that cater to diverse student needs.

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Conflict of Interest

The author(s) declared no conflict of interest.

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