

Intercorrelations Among Cognitive, Affective, and Psychomotor Learning Style Preferences in Higher Secondary School Students in Tripura, India

Ms. Sulekha Chakraborty¹, Prof. (Dr.) Prem Shankar Srivastava²

¹Research Scholar, Faculty of Education, The ICFAI University, Tripura, India.

²Principal, Faculty of Education, The ICFAI University, Tripura, India.

Abstract

This study examines the intercorrelations among cognitive, affective, and psychomotor learning style preferences in a sample of 167 higher secondary school students from Tripura, India. Using Pearson's correlation analysis, significant positive relationships were found between all pairs of learning style domains: cognitive and affective ($r = 0.535$, $p < .001$), cognitive and psychomotor ($r = 0.595$, $p < .001$), and affective and psychomotor ($r = 0.500$, $p < .001$). These findings suggest that preferences in one domain are associated with preferences in others, potentially informing tailored educational strategies. Implications for pedagogy in Indian secondary education are discussed, along with limitations and directions for future research.

Keywords: learning styles, cognitive domain, affective domain, psychomotor domain, higher secondary students, Tripura

Introduction

Learning styles refer to the preferred ways individuals process, internalize, and retain information, influencing educational outcomes across diverse contexts. Bloom's taxonomy, a foundational framework in educational psychology, delineates three primary domains of learning: cognitive (knowledge and intellectual skills), affective (emotions, attitudes, and values), and psychomotor (physical skills and coordination) (Bloom, 1956). [pmc.ncbi.nlm.nih.gov](https://pubmed.ncbi.nlm.nih.gov) This taxonomy has been revised to emphasize dynamic processes in learning, teaching, and assessment (Anderson & Krathwohl, 2001). Understanding intercorrelations among these domains is crucial, as it can reveal how students' preferences interconnect, aiding educators in designing holistic curricula that address multiple facets of learning. [simplypsychology.org](https://www.simplypsychology.org)

Previous research has explored relationships between these domains, often finding positive associations that suggest integrated learning experiences enhance overall achievement. [pmc.ncbi.nlm.nih.gov](https://pubmed.ncbi.nlm.nih.gov) For instance, studies indicate that emotionalized learning experiences significantly impact cognitive, affective, and psychomotor outcomes in students. [pmc.ncbi.nlm.nih.gov](https://pubmed.ncbi.nlm.nih.gov) In the context of Indian education, investigations into learning styles among higher secondary students have primarily focused on visual-auditory-kinesthetic models, revealing variations by gender, locality, and academic performance. files.eric.ed.gov/fulltext/ED487121.pdf However, fewer studies have examined Bloom's domains specifically in this demographic, particularly in northeastern states like Tripura, where cultural and regional factors may influence educational preferences. [propulsiontechjournal.com](https://www.propulsiontechjournal.com)

Tripura, a state in northeast India, has a diverse student population in higher secondary schools, with emphasis on holistic development amid challenges like limited resources. This

study addresses a gap by investigating correlations among cognitive, affective, and psychomotor learning style scores in this population, hypothesizing positive interrelationships based on prior evidence of domain interdependence. [researchgate.net/iopscience.iop.org](https://www.researchgate.net/iopscience.iop.org)

Methods

Participants

The population comprised higher secondary school students (grades 11-12) in Tripura, India. A convenience sample of 167 students was recruited from multiple schools in urban and rural areas to ensure representation. Participants' ages ranged from 16 to 18 years, with a balanced gender distribution (approximately 52% male, 48% female). Informed consent was obtained from school authorities and participants, adhering to ethical guidelines for educational research.

Measures

Learning style preferences were assessed using a self-report questionnaire adapted from Bloom's taxonomy domains. [pmc.ncbi.nlm.nih.gov](https://pubmed.ncbi.nlm.nih.gov) The instrument consisted of 30 items (10 per domain) rated on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Items for the cognitive domain focused on preferences for analytical thinking and problem-solving; affective items addressed emotional engagement and value-based learning; psychomotor items emphasized hands-on activities and skill demonstration. The questionnaire demonstrated adequate internal consistency (Cronbach's $\alpha > 0.75$ for each subscale) in pilot testing.

Procedure

Data were collected during regular school hours via paper-based administration. Participants completed the questionnaire in approximately 20 minutes, with anonymity assured.

Data Analysis

Data were entered and analyzed using jamovi (version 2.6), an open-source statistical software built on R for user-friendly statistical computations. [jamovi.org](https://www.jamovi.org) Descriptive statistics were computed, and Pearson's product-moment correlations were used to examine relationships among the three learning style scores. Significance was set at $p < .001$ to account for multiple comparisons.

Results

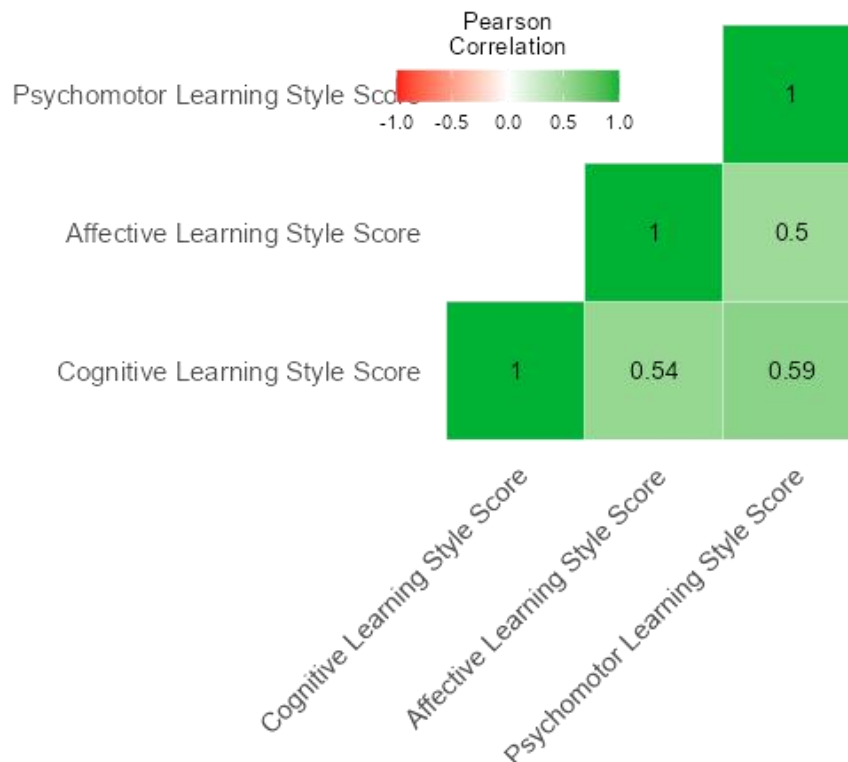
The correlation matrix for the learning style scores is presented in Table 1. All correlations were positive and statistically significant.

Table 1. Correlation Matrix for Cognitive, Affective, and Psychomotor Learning Style Scores (N = 167)

	Cognitive	Affective	Psychomotor
Cognitive	—	0.535***	0.595***
Affective		—	0.500***
Psychomotor			—

Note: *** $p < .001$ (two-tailed). $df = 165$ for all pairs.

Correlation Heatmap



The strongest correlation was between cognitive and psychomotor styles ($r = 0.595$), followed by cognitive-affective ($r = 0.535$), and affective-psychomotor ($r = 0.500$). These results support the hypothesis of positive interdomain associations.

Discussion

The findings demonstrate significant positive intercorrelations among cognitive, affective, and psychomotor learning style preferences, aligning with research indicating that preferences in one domain often complement others. For example, students favoring cognitive approaches may also engage affectively and psychomotorly, suggesting an integrated learning profile that could enhance overall educational engagement. This is particularly relevant in Indian contexts, where studies on higher secondary students show learning styles influence academic achievement and vary by demographic factors.

Implications include the potential for educators in Tripura to adopt multifaceted teaching methods, such as project-based learning that incorporates all domains, to cater to correlated preferences and improve student performance. However, the moderate correlation strengths indicate that while related, domains are not entirely overlapping,

underscoring the need for balanced curricula.bibliomed.org

Limitations include the reliance on self-report data, which may be subject to social desirability bias, and the sample size, which limits generalizability beyond Tripura. Future research could incorporate longitudinal designs or observational measures to validate these correlations and explore causal links.hrpub.org

Conclusion

This study highlights significant positive correlations among cognitive, affective, and psychomotor learning style preferences in higher secondary students in Tripura, contributing to the understanding of multidimensional learning in Indian education. By recognizing these interrelationships, educators can foster more inclusive and effective teaching practices.

References

1. Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives. Longman.
2. Bloom, B. S. (Ed.). (1956). Taxonomy of educational objectives: The classification of educational goals. Handbook I: Cognitive domain. David McKay.
3. The jamovi project (2024). jamovi (Version 2.6) [Computer Software]. <https://www.jamovi.org>
4. R Core Team (2024). R: A language and environment for statistical computing (Version 4.4) [Computer software]. <https://cran.r-project.org>