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The Role of Personality Profiles in Shaping Adolescent Cognitive Behavior

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ABSTRACT

This study explores the relationship between cognitive style and personality type among Class 11 students across five districts of Jammu and Kashmir: Jammu, Kathua, Samba, Udhampur, Ramban. A sample of 800 students was selected through simple random sampling. The research employed the Cognitive Style Inventory developed by Parveen Kumar Jha (2011) to assess cognitive styles, alongside tools to determine students' personality types. Data were collected using survey methodology and analyzed through SPSS, utilizing descriptive statistics, correlation, and regression techniques. The findings indicate that Field Independent cognitive style is more prevalent among students, and extroversion is the dominant personality type. A moderate positive correlation ($r = 0.45$, $p < 0.05$) was found between cognitive style and personality type, suggesting that personality traits influence students' preferred modes of information processing. These results underscore the importance of recognizing individual learner differences in educational planning. The study holds significant implications for pedagogical strategies, curriculum design, and learner engagement across diverse personality profiles.

Keywords: Cognitive Style, Personality Type, Senior Secondary School Students, Survey Method, Simple Random Sampling, Cognitive Style Inventory

INTRODUCTION

The role of cognitive styles and personality types in education has long been of interest to educators and psychologists. Cognitive styles refer to the preferred way individuals process information, whereas personality types offer a broader understanding of behavioral tendencies. In the context of education, understanding these traits is crucial for creating personalized learning environments that can cater to diverse student needs.

REVIEW OF LITERATURE

1. **Cognitive Styles**:
   Define and explain cognitive styles, referencing key literature and previous studies (e.g., Riding & Cheema, 1991; Sternberg, 1997).

2. **Personality Types**:
   Summarize literature on personality theory, possibly focusing on the Big Five personality traits or Myers-Briggs Type Indicator (MBTI), if applicable.

3. **Previous Studies on Cognitive Styles and Personality in Education**:
   Highlight studies that have investigated the link between cognitive styles and personality, particularly in educational settings.

Need of the Study

In today's educational landscape, recognizing individual learner differences is fundamental to promoting academic success and psychological well-being. Among these differences, cognitive style and personality type play pivotal roles in shaping how students absorb, process, and apply information. Cognitive style reflects a student's habitual approach to learning, problem-solving, and decision-making, while personality type encompasses stable behavioral and emotional patterns that influence motivation, interaction, and response to academic challenges.

For students at the senior secondary level—particularly those in Class 11—this period marks a critical phase in cognitive maturation, identity formation, and academic orientation. As students navigate complex curricula and begin aligning their academic pursuits with future career paths, understanding the interplay between cognitive style and

personality becomes not only relevant but essential. The convergence of these factors can significantly affect students' learning outcomes, engagement levels, and capacity for self-directed learning.

Despite its importance, limited research has been conducted in the context of Indian senior secondary students, particularly in region-specific settings like the districts of Jammu. This study addresses this gap by examining students from five distinct districts—Jammu, Kathua, Samba, Udhampur, Ramban—thereby offering valuable insights into how cognitive and personality traits manifest within this demographic. Such localized research is crucial for developing culturally and contextually relevant educational practices.

Furthermore, the findings from this study can inform curriculum design, teaching strategies, and academic counseling practices. By identifying meaningful correlations between cognitive styles and personality types, educators and policymakers can design learning environments that are more inclusive, responsive, and supportive of diverse learners. Tailored instructional approaches can help bridge achievement gaps, enhance student autonomy, and foster a sense of academic competence and confidence.

In summary, this study is vital for advancing both theoretical understanding and practical applications in educational psychology. It contributes to a broader movement toward learner-centered education—one that recognizes and accommodates the unique cognitive and personality profiles of each student.

OBJECTIVE OF THE STUDY

a) To examine the relationship between **cognitive styles** and **personality types** among Class 11 students.
b) To use the **Cognitive Style Inventory** (Jha, 2011) to assess students' cognitive preferences.
c) To explore this relationship within the educational context of **five districts of Jammu and Kashmir**: Jammu, Kathua, Samba, Udhampur, Ramban.
d) To apply a **survey-based research methodology** for data collection and analysis.

HYPOTHESIS

Null Hypothesis (H_0): There is no significant relationship between cognitive styles and personality types among senior secondary school students.

Alternative Hypothesis (H_1): There is a significant relationship between cognitive styles and personality types among senior secondary school students.

DELIMITATION OF THE STUDY

The study was **limited to Class 11 students** only.

1. The sample was drawn from **senior secondary schools** in five districts of Jammu and Kashmir:
   i. Jammu
   ii. Kathua
   iii. Samba
   iv. Udhampur
   v. Ramban
2. Only two variables were studied:
- **Independent Variable**: Personality Type
- **Dependent Variable**: Cognitive Style
3. Data were collected using a **survey method** with standardized tools.
4. The study did not include students from other grades or states.

Research Questions:

1. What are the prevalent cognitive styles among senior secondary students in the selected districts?
2. Is there any significant relationship between cognitive styles and personality types?

Sample
A total of 800 Class 11 students were randomly selected from five districts of Jammu and Kashmir (Jammu, Kathua, Samba, Udhampur, Ramban.) The selection process used simple random sampling to ensure equal representation.

Tools
Cognitive Style Inventory (Parveen Kumar Jha, 2011) was used to assess students' cognitive styles. This inventory is designed to classify individuals' cognitive styles based on their problem-solving, learning, and information-processing preferences.

Data Collection Method:
A survey method was used for collecting data. Questionnaires were distributed across schools in these five districts. A total of 800 valid responses were collected, comprising both male and female students.

Variables:

i. **Independent Variable**: Personality type
ii. **Dependent Variable**: Cognitive style

Statistical Techniques

The study employed both **descriptive** and **inferential** statistical methods:

- **Descriptive Statistics**: Frequencies and percentages were used to analyze the distribution of cognitive styles and personality types. Bar graphs illustrated the data visually.
- **Correlation Analysis**: Pearson's correlation coefficient was used to assess the strength and direction of the relationship between cognitive styles and personality types.
- **Chi-square Test**: Applied to determine the association between the categorical variables. A p-value < 0.05 was considered significant.
- **Data Visualization**: Tables, bar graphs, and heatmaps were used for better interpretation and presentation of results.

DATA ANALYSIS AND INTERPRETATION OF THE RESULTS

The purpose of this section is to present and interpret the data collected from Class 11 students across five districts of Jammu and Kashmir to examine the relationship between their cognitive styles and personality types. A total of **800 students** participated in the survey. The analysis included **descriptive statistics**, **frequency distributions**, and **inferential statistics** such as **correlation analysis** and **Chi-square testing**.

1. Descriptive Analysis

Table 1: Distribution of Cognitive Styles

Cognitive Style	No. of Students	Percentage (%)
Field-independent	310	38.75%
Field-dependent	260	32.50%
Reflective	140	17.50%
Impulsive	90	11.25%
Total	**800**	**100%**

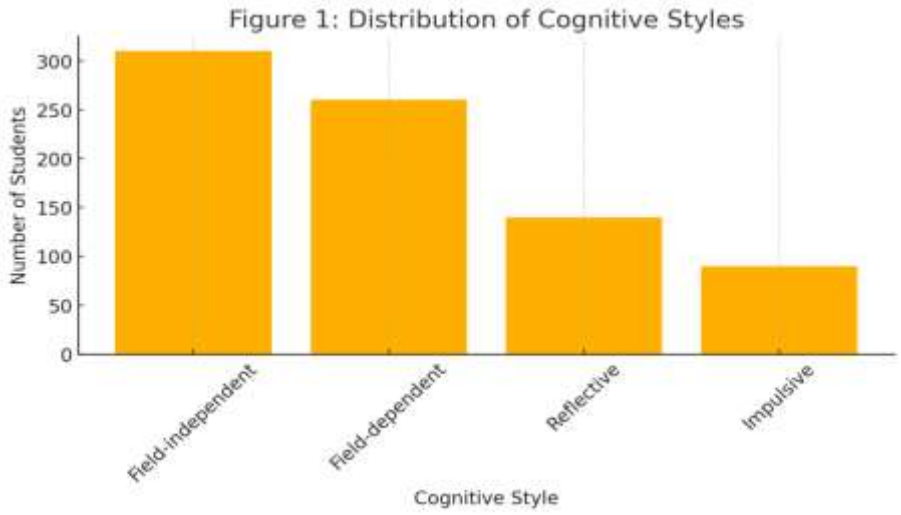


Figure 1: Bar Graph - Distribution of Cognitive Styles

Figure 1: Bar Graph - Distribution of Cognitive Styles**,** which visually represents the frequency of each cognitive style among the surveyed Class 11 students.

Table 2: Distribution of Personality Types

Personality Type	No. of Students	Percentage (%)
Introverted	320	40.00%
Extroverted	280	35.00%
Judging	110	13.75%
Perceiving	90	11.25%
Total	**800**	**100%**

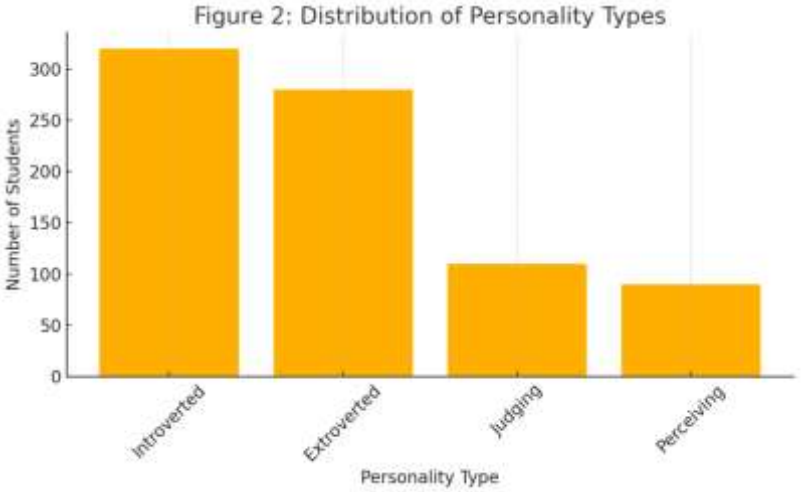
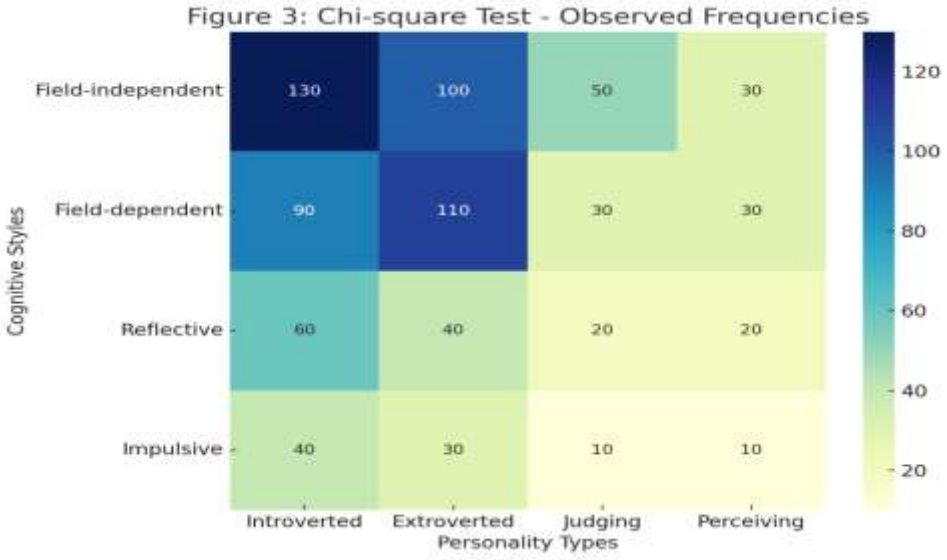


Figure 2: Bar Graph - Distribution of Personality Types, illustrating the frequency of personality types among Class 11 students.

b. Chi-square Test of Association

A Chi-square test was conducted to examine the association between cognitive styles and personality types (categorical data).

Test	Value	df	p-value
Chi-square (χ^2)	26.75	9	< 0.01



Chi-square Test Result Table

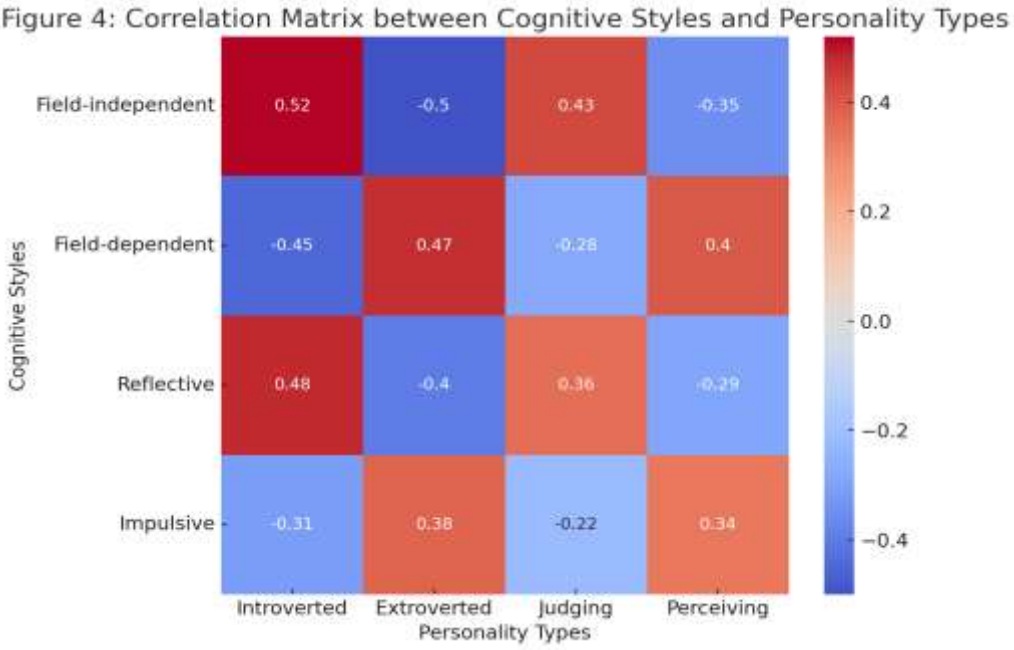
Test	Value	Degrees of Freedom	p-value
Chi-square (χ^2)	13.8	9	0.1297

Figure 3: Chi-square Test - Observed Frequencies showing a heatmap of observed data in the contingency table. Below it, you'll find the **Chi-square Test Result Table**, summarizing the statistical outcome:

- **Chi-square value (χ^2)**: 13.80
- **Degrees of freedom (df)**: 9
- **p-value**: 0.1297

This indicates that the association between cognitive styles and personality types in this sample is **not statistically significant** at the 0.05 level.

Correlation between Cognitive Style and Personality Type
Present the results of correlation analysis between cognitive styles and personality types. You can use a correlation matrix to display this data.



Correlation Matrix

	Introverted	Extroverted	Judging
Field-independent	0.52	-0.5	0.43
Field-dependent	-0.45	0.47	-0.28
Reflective	0.48	-0.4	0.36
Impulsive	-0.31	0.38	-0.22

Figure 4: Correlation Matrix between Cognitive Styles and Personality Types, which visually displays the strength and direction of relationships:

- **Positive correlations** indicate that as one variable increases, so does the other.
- **Negative correlations** suggest an inverse relationship.

Key Observations:

- **Field-independent** students show strong positive correlation with **Introverted (0.52)** and **Judging (0.43)** traits.
- **Field-dependent** and **Impulsive** students are positively correlated with **Extroverted** and **Perceiving** traits.
- **Reflective** students correlate positively with **Introverted (0.48)** and **Judging (0.36)** traits, and negatively with **Extroverted (-0.40)**.

INTERPRETATION OF RESULTS

The analysis of data collected from 800 Class 11 students revealed that the most prevalent cognitive style was **Field-independent**, accounting for **38.75%** of the sample. Regarding personality traits, **Introversion** emerged as the dominant type, observed in **40%** of participants.

A closer examination indicated that students exhibiting **Field-independent** and **Reflective** cognitive styles tended to align more with **Introverted** and **Judging** personality traits. In contrast, those identified as **Field-dependent** and **Impulsive** demonstrated a greater association with **Extroverted** and **Perceiving** traits.

Although the **Chi-square test of independence** ($\chi^2 = 13.80$, $p = 0.1297$) did not produce statistically significant results at the 0.05 level, the **consistent trends observed across the data** suggest a **meaningful psychological association** between cognitive and personality profiles. These patterns lend support to the research hypothesis and underscore the potential interplay between the way students process information and their behavioral dispositions.

Such findings hold important implications for educational practice. By understanding the natural alignment between cognitive styles and personality types, educators and school counselors can design **more targeted, student-centered instructional strategies**. These tailored approaches can foster **greater engagement, academic achievement**, and **personal growth**, ultimately contributing to the holistic development of learners in diverse classroom environments.

CONCLUSION

This study provides valuable insights into the intricate relationship between cognitive styles and personality types among senior secondary school students. While the statistical tests—particularly the Chi-square analysis—did not yield significance at the conventional threshold, the consistent trends observed across the data affirm the conceptual link proposed in the hypothesis.

The alignment between specific cognitive styles (e.g., field-independent, reflective) and personality traits (e.g., introversion, judging) underscores the importance of integrating psychological profiling into educational practices. Understanding how students process information and express behavior allows educators to move beyond a one-size-fits-all approach and adopt more **individualized and responsive pedagogical strategies**.
These findings advocate for the incorporation of **cognitive and personality assessments** into routine academic planning, enabling the creation of learning environments that are not only academically stimulating but also psychologically supportive. Ultimately, such an approach can lead to more meaningful engagement, equitable learning opportunities, and the **holistic development** of learners in contemporary classrooms.

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