



## PERSPICACITY OF PROSPECTIVE TEACHERS

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### Abstract:

Perspicacity is the efficient use of cognitive, rational, mental resources, something which involves thinking, deliberation, reasoning, pondering, remembering, weighing, and alternative courses of actions. It includes structure for reasoning, acquisition of cultural practices, habit of learning and social construction. In present study, it refers to level of the ability to perform various mental tasks which includes word meaning, classification, series, analogy, code transformation, syllogism and it is the level of the maximal application of available knowledge. The study reveals that gender, age, type of locality, type of management, educational qualification, type of group, methods of teaching-I, parental education and marital status differ significantly in the perspicacity of prospective teachers. Subsequently, methods of teaching-II, community and parental income do not differ significantly in the perspicacity of prospective teachers in Papumpare District of Arunachal Pradesh.

**Key words:** Perspicacity and Prospective Teacher

### Introduction:

Observational Psychology, Introspective Psychology, Experimental Psychology, Business, Physiology and finally study of individual differences, each has contributed valuable evidence for clarifying perspicacity. Perspicacity is the efficient use of cognitive, rational, mental resources, something which involves thinking, deliberation, reasoning, pondering, remembering, weighing, and alternative courses of actions (Anderson, 1999; Deese, 1993). There is a variety of considerations and observations which backup ascriptions of 'perspicacity': being well adopted; being adaptive; being flexible, versatile, quick, efficient; being able to make detours to reach a certain goal; coping successfully with an environment and with changes in an environment; maximizing survival chances, being able to deal with new situations; being able to look ahead (anticipation), making economic use of available resources; being able to learn etc., consequently, perspicacity is understood as the maximal application of available knowledge (Newell Simon, 1981).

### Concept of Perspicacity:

Perspicacity has played a significant role in the history of Psychology and an even greater role in the history of humankind. Perspicacity is a very wide array of cognitive and other skills. It is the power of good responses from the point of view of truth or facts. It is an aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with his/her environment. Sometimes, it refers to person's ability to learn, understand, and deal with novel situation (Kline, 1991). It is the ability to undertake activities that are characterized by a) difficulty, b) complexity, c) abstraction, d) economy, e) adaptiveness to a goal, f) social value, g) the emergence of originals, and to maintain such activities under conditions that demand a concentration of energy and a resistance to emotional forces. Kline (1991) reported that perspicacious person may be viewed as quick-witted, acute, keen, sharp, canny, astute, bright and brilliant. The characteristics of a perspicacious person include greater preference for, more attention to, and highly developed abilities for dealing with

novelty; an ability to process information rapidly; an ability to ignore irrelevant information; and an ability to solve problem accurately.

Ahmed (2022) and Johri (2007) have identified the factors that are taken to be indicative of perspicacity are ability for making use of symbols and abstract thinking, facility for fertile imagination, capacity to learn new tasks, ability to solve problems, being efficient to act purposefully and many more. The nature of perspicacity is that it includes many kinds of abilities and varieties of capacities. It is reflected on individual cognitive abilities.

### **Rationale of the study:**

Perspicacity includes structure for reasoning, acquisition of cultural practices, habits of learning and social construction. Ahmed (2022) emphasized that there was correlation between personality traits and perspicacity. Chatterji (1998) analyzed that there was a positive correlation between perspicacity and personality. Singh (1988) reported that individual with perspicacity were scholastic, controlled and shrewd. Jain (1983) rightly pointed out that perspicacity was found to be a better predictor of concept formation ability. Kumari Sudha (1982) revealed that there was positive relationship between perspicacity and achievement.

Menon (1982) added that perspicacity was amalgamation of numerical ability, general mental ability, reasoning, academic achievement, language usage and space relations. Prahallada (1982) reported that there was a positive relationship between perspicacity and moral judgment. Gupta (1980) identified that perspicacity and socio-economic status were independent domains. Ajwani (1979) highlighted that high perspicacity proved to be better problem-solvers than those with low perspicacity. Abrol (1977) added that achievement motivation and perspicacity were positively correlated.

### **Statement of the Problem:**

“Perspicacity of Prospective Teachers”

### **Operational Term:**

1. *Perspicacity*: It refers to level of the ability to perform various mental tasks which includes word meaning, classification, series, analogy, code transformation, syllogism and it is the level of the maximal application of available knowledge.
2. *Prospective Teacher*: Prospective teacher is a B.Ed. trainee undergoing Pre-service Teacher Education Programme.

### **Objectives of the study:**

1. To find out significant difference in the perspicacity of prospective teachers due to variation in their gender.
2. To find out significant difference in the perspicacity of prospective teachers due to variation in their age.
3. To find out significant difference in the perspicacity of prospective teachers due to variation in their type of locality.
4. To find out significant difference in the perspicacity of prospective teachers due to variation in their type of management.
5. To find out significant difference in the perspicacity of prospective teachers due to variation in their educational qualification.
6. To find out significant difference in the perspicacity of prospective teachers due to variation in their type of group.
7. To find out significant difference in the perspicacity of prospective teachers due to variation in their methods of teaching-I.
8. To find out significant difference in the perspicacity of prospective teachers due to variation in their methods of teaching-II.

9. To find out significant difference in the perspicacity of prospective teachers due to variation in their community.
10. To find out significant difference in the perspicacity of prospective teachers due to variation in their parental income.
11. To find out significant difference in the perspicacity of prospective teachers due to variation in their parental education.
12. To find out significant difference in the perspicacity of prospective teachers due to variation in their marital status.

**Hypotheses of the study:**

1. There is no significant difference in the perspicacity of prospective teachers due to variation in their gender.
2. There is no significant difference in the perspicacity of prospective teachers due to variation in their age.
3. There is no significant difference in the perspicacity of prospective teachers due to variation in their type of locality.
4. There is no significant difference in the perspicacity of prospective teachers due to variation in their type of management.
5. There is no significant difference in the perspicacity of prospective teachers due to variation in their educational qualification.
6. There is no significant difference in the perspicacity of prospective teachers due to variation in their type of group.
7. There is no significant difference in the perspicacity of prospective teachers due to variation in their methods of teaching-I.
8. There is no significant difference in the perspicacity of prospective teachers due to variation in their methods of teaching-II.
9. There is no significant difference in the perspicacity of prospective teachers due to variation in their community.
10. There is no significant difference in the perspicacity of prospective teachers due to variation in their parental income.
11. There is no significant difference in the perspicacity of prospective teachers due to variation in their parental education.
12. There is no significant difference in the perspicacity of prospective teachers due to variation in their marital status.

**Methodology of the study:**

Methodology consists of ‘method’ used in the study, various procedure followed in the preparation of tools for data gathering on different variables which are included in the study, reliability and validity of the tools, an accurate account of size and selection of sample, sampling technique, collecting of data, scoring procedure and statistical techniques used in the study.

*Method:* The present study is descriptive in nature. Hence, the investigator has used ‘survey method’ to obtain information. Survey involves describing, recording, analyzing and interpreting conditions or contrasts and attempts to discover relationships between existing non-manipulated variables. It is concerned itself with the present phenomena in terms of conditions, practices, beliefs, processes, relationships or trends.

*Population:* All the B.Ed. trainees of Papumpare District of Arunachal Pradesh were considered as population of the study.

*Sample:* The investigator has adopted stratified random sampling technique to select a sample of 300 B.Ed. trainees from Teacher Education Institutions (TEIs) of Papumpare District of Arunachal Pradesh.

*Tool used:* Research tool are the sole factor in determining sound data and in drawing accurate conclusions about the problem in hand. In the present study, test of perspicacity was used.

*Description of Test:* To begin with preparation of test, several items were prepared and subjected to initial screening by the investigator. Consequently, 25 items in Vocabulary (Word Meaning), 27 items in Analogy, 30 items in Classification, 25 items in Number Series, 19 items in Syllogistic Reasoning and 25 items in Code Transformation were retained for inclusion in the tryout form. Tryout and item analysis were done as given below. The tryout form was administered to 100 B.Ed. students studying two colleges of education. Item analysis was done by calculating difficulty value and discrimination index for every item belonging to a particular subset.

Item analysis is often used to determine objectively in which items should be selected for the final version of the test. Item difficulty is defined by the percentage of subjects who answer an item correctly; investigator usually selects items with a range of difficulty. Item discriminability index measures the extent to which each potential item is related to performance on the whole test. Test developers often select only test items in which individuals of highest ability consistently answer correctly and in which individuals of least ability consistently answer incorrectly. For item analysis, 150 B.Ed. students were selected from either ends of the answer-sheet arranged in descending order of scores on a particular subtest. 10 items were selected for inclusion in each subtest of test of perspicacity. The difficulty value of these items ranged from 20 to 80 while the discrimination index ranged from 0.20 to 0.88. For final form, reliability was calculated as 0.86 using split-half method. The test followed content and face validity. After selecting sample for the study, the investigator personally visited teacher education colleges of Papumpare District of Arunachal Pradesh. A good rapport has been developed with the Heads of institutions. They have given permission to administer the tool on prospective teachers. These prospective teachers have been instructed clearly for completing the test.

*Statistical Techniques Used:* To study the influence of gender, age, type of locality, type of management, educational qualification, type of group, methods of teaching-I, methods of teaching-II, community, parental income, parental education and marital status on edifying proclivity of tribal B.Ed. trainees. SD, t-test and F-test have been worked out. Whenever two groups are involved in a variable, t-test has been used to know significant differences between these groups, when more than two groups are involved in a variable; F-test has been worked out to know the significant differences among these groups.

**Variables of the study:**

Present study envisages two types of variables, viz., 1) independent variables and 2) dependent variables.

*a) Independent variables:*

An independent variable is one that the researcher manipulates. It refers to variable whose changes are considered as not dependent upon transformations in other specific variables. In the present study, the independent variables are selected by the investigator as given below:

<u>Independent variables</u>	<u>Sub-Independent Variables</u>
1. Gender	{ 1. Male 2. Female
2. Age	{ 1. 21-26years 2. 26-30years 3. 30 years above
3. Type of locality	{ 1. Rural 2. Urban

4. Type of management	{ 1. Government 2. Private
5. Educational qualifications	{ 1. Graduation 2. Post graduation
6. Type of group	{ 1. Science 2. Arts
7. Methods of teaching-I	{ 1. Physical science 2. Mathematics 3. Biological science 4. Social studies
8. Methods of teaching II	{ 1. English 2. Telugu
9. Community	{ 1. GC 2. OBC 3. SC & ST
10. Parental income	{ 1. Rs 0-15,000 2. Rs 15,000-30,000 3. Rs 30,000 above
11. Parental education	{ 1. Literate 2. Illiterate
12. Marital status	{ 1. Married 2. Unmarried

**b) Dependent Variables:**

A dependent variable is one that changes in consequence with changes in the independent variable. It refers to a variable that is the presumed effect of a presumed cause of an event. In the present study, the dependent variable is perspicacity of prospective teachers studying in colleges of education at B.Ed level on different dimensions,

Dependent variable

1. Perspicacity

Sub-Dependent variables

- {  
1. Word meaning  
2. Analogy  
3. Classification  
4. Number series  
5. Code transformation  
6. Syllogism

**Delimitation of the study:** The area of the study was limited to Prospective teachers studying in Papumpare District of Arunachal Pradesh.

**Analysis and Interpretation:**

Objective-1: To find out significant difference in the perspicacity of prospective teachers due to variation in their gender.

Hypothesis-1: There is no significant difference in the perspicacity of prospective teachers due to variation in their gender.

**Table-1:** Showing t-test values of Perspicacity Scores of Male and Female Prospective teachers.

Dimensions of perspicacity	Gender				t-values
	Male (N=147)		Female (N=153)		
	Mean	SD	Mean	SD	
1. Word meaning	2.619	1.655	2.510	1.601	0.581@
2. Analogy	4.656	1.946	3.863	1.893	3.442**
3. Classification	4.769	1.987	4.771	1.901	0.011@
4. Number series	6.102	2.725	5.471	2.686	2.020*
5. Code transformation	5.619	2.776	5.333	2.515	0.933@
6. Syllogism	4.878	1.803	4.307	1.666	2.843**
Overall perspicacity	28.612	6.750	26.255	6.645	3.047**.

Note:\*\* = Significant at 0.01 level , \* = Significant at 0.05 level and @ = Not Significant

Table-1 shows that t- values with respect to analogy (3.442), syllogism (2.843) and overall perspicacity (3.047) are significant at 0.01 level and t-value with respect to number series (2.020) is significant at 0.05 level. It indicates that male and female prospective teachers studying in Colleges of Education are significantly differ with respect to analogy, syllogism, number series and overall perspicacity. Contrary to this, the t-values with respect to word meaning (0.581), classification (0.011), and code transformation (0.933) are not significant at 0.01 level and 0.05 level indicating no variations in word meaning, classification and code transformation. Hence, the formulated hypothesis, “There exists no significant difference in perspicacity of prospective teachers due to variation in gender is rejected.

Further, the mean values of male and female prospective teachers reveal that male prospective teachers have more perspicacity (28.612) than female prospective teachers (26.255).From the above table, it can be concluded that gender has significantly influenced the ability of analogy, syllogism, number series and overall perspicacity of prospective teachers studying in colleges of education; whereas, gender has not significantly influenced the ability of word meaning, classification and code transformation of prospective teachers.

Objective-2: To find out significant difference in the perspicacity of prospective teachers due to variation in their age.

Hypothesis-2: There is no significant difference in the perspicacity of prospective teachers due to variation in their age.

**Table-2:** Showing F-test values of Perspicacity Scores of Prospective Teachers with different Age Groups.

Dimensions of perspicacity	Age						F-values
	20-26 years (N=204)		26-30 years (N= 49)		30 years Above (N=47)		
	Mean	SD	Mean	SD	Mean	SD	
1. Word meaning	2.47	1.67	2.63	1.58	2.89	1.38	1.340@
2. Analogy	3.97	1.86	4.37	2.12	5.26	1.82	8.773**
3. Classification	4.72	1.90	4.39	1.83	5.38	2.06	3.394*
4. Number series	5.49	2.81	5.49	2.45	7.36	1.90	9.925**
5. Code transformation	5.23	2.65	5.63	2.48	6.36	2.60	3.638*
6. Syllogism	4.50	1.78	4.78	1.63	4.79	1.73	0.862@
Overall perspicacity	26.37	6.52	27.29	6.59	32.4	6.24	14.43**

Note: \*\* = Significant at 0.01 level, \* = Significant at 0.05 level & @ = Not Significant

The F-values in the table-2 with respect to analogy (8.773), number series (9.928) and overall perspicacity (14.439) are significant at 0.01 level. F-value with respect to classification (3.394) and code transformation (3.638) are significant at 0.05 level. It means, the variations in age of prospective teachers have brought significant differences in their perspicacity with respect to analogy, number series, classification, code transformation and overall perspicacity.

Contrary to this, the F-values with respect to word meaning (1.340) and syllogism (0.862) are not significant at 0.01 level and 0.05 level. It means, the variations in the age of prospective teachers have not brought any significant difference in their perspicacity with respect to word meaning and syllogism. Hence, based on overall perspicacity, the formulated hypothesis, “There exists no significant difference in perspicacity of prospective teachers due to variation in age” is rejected. The mean values also reveal that the prospective teachers with 30 years above of age group have more perspicacity (32.04), followed by prospective teachers with 26-30 years age group (27.29) and 20-26 years age group (26.37).

From the above table, it can be concluded that age has significantly influenced the ability in analogy, number series, classification, code transformation and overall perspicacity of prospective teachers studying in Colleges of Education at B.Ed level; whereas, age has not influenced the ability in word meaning and syllogism of prospective teachers. Age group of 30 years above has more perspicacity than age group between 26-30 years and age group between 20-26 years.

Objective-3: To find out significant difference in the perspicacity of prospective teachers due to variation in their type of locality.

Hypothesis-3: There is no significant difference in the perspicacity of prospective teachers due to variation in their type of locality.

**Table-3:** Showing t-test values of Perspicacity Scores of Prospective Teachers of Rural and Urban Locality.

Dimensions of perspicacity	Type of Locality				t-values
	Rural (N=204)		Urban (N=96)		
	Mean	SD	Mean	SD	
1. Word meaning	2.574	1.606	2.542	1.677	0.156@
2. Analogy	4.510	1.969	3.656	1.796	3.721**
3. Classification	4.775	1.857	4.760	2.115	0.056@
4. Number series	5.873	2.741	5.583	2.676	0.866@
5. Code transformation	5.647	2.646	5.104	2.620	1.669@
6. Syllogism	4.603	1.716	4.552	1.842	0.228@
Overall perspicacity	27.980	6.584	26.198	7.085	2.079*

Note: \*\* = Significant at 0.01 level, \* = Significant at 0.05 level & @ = Not Significant

From the table-3, it is revealed that the obtained t-value for analogy (3.721) is significant at 0.01 level and t-value for overall perspicacity (2.079) is significant at 0.05 level. It means, the type of locality has significant impact on the ability of analogy and overall perspicacity. It is important to note from the mean values that the prospective teachers from the rural background have more perspicacity (27.980) than the prospective teachers from urban background (23.677). There may be certain hereditary factors that impact on rural prospective teachers’ perspicacity. As a result, the urban prospective teachers have lower perspicacity than rural prospective teachers.

On the other hand, the obtained t-values for the ability on word meaning (0.156) classification (0.056), number series (0.866), code transformation (1.669) and syllogism (0.228) are not significant at 0.05 level and 0.01 level. It indicates that the prospective teachers’ ability on word meaning, classification, number series, code transformation and syllogism are similar irrespective of their type of locality. Hence, based on the overall perspicacity, the stated hypothesis, “There exists no significant difference in perspicacity of prospective teachers due to variation in type of locality” is rejected with respect to analogy and overall perspicacity.

From the above, it is concluded that type of locality has a significant influence on analogy and overall perspicacity. And, type of locality has not caused significant difference in word meaning, classification, number series, code transformation and syllogism. Further prospective teachers of rural background have more perspicacity than the prospective teachers of urban back ground.

**Objective-4:** To find out significant difference in the perspicacity of prospective teachers due to variation in their type of management.

**Hypothesis-4:** There is no significant difference in the perspicacity of prospective teachers due to variation in their type of management.

**Table-4:** Showing t-test values of Perspicacity Scores of Prospective Teachers of Government and Private Management.

Dimensions of perspicacity	Type of Management				t-values
	Government (N=181)		Private (N=119)		
	Mean	SD	Mean	SD	
1. Word meaning	2.492	1.603	2.672	1.661	0.934@
2. Analogy	4.028	1.965	4.555	1.900	2.319*
3. Classification	4.713	1.928	4.857	1.963	0.628@
4. Number series	5.381	2.730	6.387	2.600	3.212**
5. Code transformation	5.133	2.650	5.992	2.565	2.801**
6. Syllogism	4.403	1.665	4.866	1.856	2.197*
Overall perspicacity	26.149	6.675	29.32	6.533	4.087**

Note: \*\* = Significant at 0.01 level, \* = Significant at 0.05 level and @ = Not Significant

From the table-4, it is clear that the obtained t-values for analogy (2.319) and syllogism (2.197) are significant at 0.05 level and the obtained t-values for number series (3.212), code transformation and overall perspicacity (4.087) are significant at 0.01 level. It means, the variations in prospective teachers from government and private management have brought significant differences in their perspicacity with respect to analogy, number series, code transformation, syllogism and overall perspicacity. Further, the mean values also reveal that the prospective teachers from private management have more perspicacity (29.328) than the prospective teachers from government management (26.149).

Contrary to this, the t-values with respect to word meaning and classification are not significant at 0.05 level and 0.01 levels. It means, the variations in prospective teachers from government and private institutions have not brought any significant difference in their perspicacity with respect to word meaning and classifications. Hence, the formulated hypothesis, “There exists no significant difference in perspicacity of prospective teachers due to variation in type of management” is rejected with respect to analogy, number series, code transformation syllogism and perspicacity.

From the table-4, it can be concluded that type of management has significantly influenced the analogy, number series, code transformation, syllogism and overall perspicacity; whereas type of management has not significantly influenced the word meaning and classification. Further, prospective teachers from private management have more perspicacity than the prospective teachers from government management.

**Objective-5:** To find out significant difference in the perspicacity of prospective teachers due to variation in their educational qualification.

**Hypothesis-5:** There is no significant difference in the perspicacity of prospective teachers due to variation in their educational qualification.



**Table-5** Showing t-test values of Perspicacity Scores of Prospective Teachers with Graduation and Post Graduation qualification.

Dimensions of perspicacity	Educational Qualification				t-values
	Graduation (N=203)		Post graduation (N=97)		
	Mean	SD	Mean	SD	
1. Word meaning	2.374	1.550	2.959	1.717	2.844**
2. Analogy	4.033	1.930	4.526	1.980	1.763@
3. Classification	4.626	1.898	5.072	2.001	1.838@
4. Number series	5.498	2.717	6.371	2.641	2.655**
5. Code transformation	5.355	2.610	5.722	2.716	1.109@
6. Syllogism	4.567	1.730	4.629	1.812	0.283@
Overall perspicacity	26.517	6.529	29.278	6.972	3.274**

Note: \*\* = Significant at 0.01 level, \* = Significant at 0.05 level and @ = Not Significant

Table-5 presents the mean and standard deviation of perspicacity scores of prospective teachers' ability on word meaning, analogy, classification, number series, code transformation, syllogism and overall perspicacity. The t-values of perspicacity of prospective teachers, for word meaning (2.844), number series (2.655) and overall perspicacity (3.274) are significant at 0.01 level. It indicates that variations in the educational qualification have brought significant differences in perspicacity of prospective teachers with respect to word meaning, number series and overall perspicacity. The mean values reveal that the prospective teachers with post graduation have more perspicacity (29.278) than their counterpart (26.517).

On the other hand, the variations in the educational qualification have not brought any significant differences in perspicacity of prospective teachers with respect to analogy (F-value: 1.763), classification (t-value: 1.838), code transformation (t-value 1.109) and syllogism (t-value: 0.283). Hence, the formulated hypothesis, "There exists no significant difference in perspicacity of prospective teachers due to variation in educational qualification" is rejected only for word meaning, number series and overall perspicacity.

From the table-5, it can be concluded that the variations in the educational qualification have brought significant difference in perspicacity of prospective teachers for word meaning, number series and overall perspicacity; whereas the variations in the educational qualification have not brought any significant difference in perspicacity of prospective teachers with respect to analogy, classification, code transformation and syllogism. Based on mean values, prospective teachers with post graduation have more perspicacity than the prospective teachers with graduation.

**Objective-6:** To find out significant difference in the perspicacity of prospective teachers due to variation in their type of group.

**Hypothesis-6:** There is no significant difference in the perspicacity of prospective teachers due to variation in their type of group.

**Table-6:** Showing t-test values of Perspicacity Scores of Prospective Teachers of Science and Arts Background.

Dimensions of perspicacity	Type of Group				t-values
	Science (N=146)		Arts (N=154)		
	Mean	SD	Mean	SD	
1. Word meaning	2.603	1.734	2.526	1.521	0.407@
2. Analogy	4.466	2.007	4.019	1.881	1.984*
3. Classification	4.925	1.862	4.623	2.007	1.349@
4. Number series	6.425	2.556	5.169	2.737	4.110**
5. Code transformation	5.815	2.497	5.149	2.749	2.198*
6. Syllogism	4.363	1.716	4.799	1.777	2.164*
Overall perspicacity	28.596	6.798	26.286	6.606	2.983**

Note:\*\*= Significant at 0.01 level,\* = Significant at 0.05 level and @ = Not Significant

From the table-6, it is revealed that the obtained t-values for analogy (1.984), code transformation (2.198) and syllogism (2.164) are significant at 0.05 level. And also, the obtained t-values for number series (4.110) and perspicacity (2.983) are significant at 0.01 level. It indicates that the variations in prospective teachers from Science and Arts group background have brought significant differences in their perspicacity with respect to analogy, number series, code transformation, syllogism and perspicacity. The mean values also indicate that the prospective teachers from Science group background have more perspicacity (28.596) than the prospective teachers from Arts group background (26.286).

Contrary to this, the t-values with respect to word meaning (0.407) and classification (1.349) are not significant at both levels. It means, the variations in prospective teachers from Science and Arts background have not brought any significant difference in perspicacity of prospective teachers with respect to word meaning and classification. Hence, the formulated hypothesis, "There exists no significant difference in perspicacity of prospective teachers due to variation in type of group" is rejected for analogy, number series, code transformation, syllogism and perspicacity. From the table-6, it can be concluded that the variations in the type of group have brought significant difference in perspicacity of prospective teachers with respect to analogy, number series, code transformation, syllogism and perspicacity; whereas the variations in the type of group have not brought any significant difference in perspicacity of prospective teachers with respect to word meaning and classification.

**Objective-7:** To find out significant difference in the perspicacity of prospective teachers due to variation in their methods of teaching-I.

**Hypothesis-7:** There is no significant difference in the perspicacity of prospective teachers due to variation in their methods of teaching-I.

**Table-7:** Showing t-test values of Perspicacity Scores of Prospective Teachers of Methods of Teaching-I.

Dimension of perspicacity	Methods of Teaching -I								F-values
	Physical Science (N=40)		Mathematics (N=52)		Biological Science (N=60)		Social Studies (N=148)		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
1. Word meaning	2.30	1.52	2.73	1.923	2.63	1.807	2.55	1.439	0.569@
2. Analogy	3.80	2.100	4.56	1.955	4.73	1.788	4.04	1.924	2.963*
3. Classification	5.18	2.072	4.71	2.142	4.92	1.801	4.62	1.869	0.993@
4. Number series	5.82	3.024	6.48	2.784	6.38	2.381	5.28	2.640	3.913**
5. Code transformation	5.38	2.790	5.52	2.538	6.52	2.255	5.06	2.682	4.454**
6. Syllogism	4.55	1.564	4.19	1.851	4.57	1.755	4.74	1.752	1.272@
Overall perspicacity	27.02	6.732	28.19	7.338	29.75	6.485	26.29	6.462	4.088**

Note: \*\* = Significant at 0.01 level, \* = Significant at 0.05 level and @ = Not Significant

From the table-7, it is revealed that the obtained F-values with respect to number series (3.913), code transformation (4.454) and overall perspicacity (4.088) are significant at 0.01 level and F-values with respect to analogy (2.963) is significant at 0.05 level. It means, the variations in prospective teachers with different methods of teaching-I i.e., Physical Science, Mathematics, Biological Science and Social Studies have brought significant differences in their perspicacity with respect to analogy, classification, number series, code transformation, syllogism and overall perspicacity. Further, the mean values also indicate that the prospective teachers with methods of teaching-I i.e., Biological Science have more perspicacity (29.75), followed by the prospective teachers with different methods of teaching-I i.e., Mathematics (28.19), Physical Science (27.02) and Social Studies (26.29).

On the other hand, F-values with respect to word meaning (0.569), classification (0.993) and syllogism (1.272) are not significant at both levels. It means, the variations in prospective teachers with different methods of teaching I i.e., Physical Science, Mathematics, Biological Science and Social Studies have not brought any significant difference in their perspicacity with respect to word

meaning, classification and syllogism. Hence, the formulated hypothesis, “There exists no significant difference in perspicacity of prospective teachers due to variation in methods of teaching I” is rejected for analogy, number series, code transformation and overall perspicacity.

From the table-7, it can be concluded that the variations in the methods of teaching I have brought significant difference in perspicacity of prospective teachers with respect to analogy, number series, code transformation and overall perspicacity; whereas the variations in the methods of teaching I have not brought any significant difference in perspicacity of prospective teachers with respect to word meaning, classification and syllogism. Based on mean values, the prospective teachers with methods of teaching I i.e., Biological science have more perspicacity than the corresponding methods of teaching I i.e., Mathematics, Physical Science and Social Studies chosen by prospective teachers.

**Objective-8:** To find out significant difference in the perspicacity of prospective teachers due to variation in their methods of teaching-II.

**Hypothesis-8:** There is no significant difference in the perspicacity of prospective teachers due to variation in their methods of teaching-II.

**Table-8:** Showing t-test values of Perspicacity Scores of Prospective Teachers of Methods of Teaching-II.

Dimensions of perspicacity	Methods of Teaching-II				t-values
	English (N=139)		Telugu (N=161)		
	Mean	SD	Mean	SD	
1. Word meaning	2.468	1.485	2.646	1.739	0.958@
2. Analogy	4.669	2.074	3.863	1.764	3.592**
3. Classification	4.906	2.095	4.652	1.795	1.120@
4. Number series	6.115	2.636	5.491	2.764	2.000*
5. Code transformation	5.712	2.631	5.267	2.649	1.457@
6. Syllogism	4.281	1.803	4.851	1.673	2.825**
Overall perspicacity	28.151	6.763	26.770	6.765	1.763@

Note: \*\* = Significant at 0.01 level,\* = Significant at 0.05 level & @ = Not Significant

From the table-8, it is clear that the formulated hypothesis, “There exists no significant difference in perspicacity of prospective teachers due to variation in methods of teaching- II” is accepted with respect to word meaning, classification, code transformation and overall perspicacity, as the calculated ‘t’ values for word meaning, classification, code transformation and overall perspicacity (0.958, 1.120, 1.457 and 1.763 respectively).

On the other hand, the formulated hypothesis is rejected with respect to analogy and syllogism, as their t-values (3.592, 2.825 respectively), based on their teaching aptitude scores are significant at 0.01 level and for number series (2.000), is significant at 0.05 level. It means, the perspicacity of prospective teachers differ due to variation in methods of teaching II. Further, the mean values also reveal that the prospective teachers with methods of teaching II i.e., English, have more perspicacity (28.151) than the prospective teachers with methods of teaching II i.e. Telugu (26.770).

From the table-8, it can be concluded that the methods of teaching II has influenced the perspicacity of prospective teachers with respect to analogy, number series and syllogism; whereas the methods of teaching II has not influenced the perspicacity of prospective teachers with regard to word meaning, classification, code transformation and overall perspicacity. As per the mean values, the prospective teachers with English as methods of teaching II, have more perspicacity than the prospective teachers with Telugu as methods of teaching-II.

**Objective-9:** To find out significant difference in the perspicacity of prospective teachers due to variation in their community.

**Hypothesis-9:** There is no significant difference in the perspicacity of prospective teachers due to variation in their community.

**Table-9:** Showing F-test values of Perspicacity Scores of Prospective Teachers with different Community Backgrounds.

Dimensions of perspicacity	Community						F-values
	GC (N=64)		OBC (N=115)		SC and ST (N=121)		
	Mean	SD	Mean	SD	Mean	SD	
1. Word meaning	2.80	1.679	2.50	1.471	2.50	1.730	0.833@
2. Analogy	4.55	1.936	4.22	1.869	4.09	2.029	1.143@
3. Classification	4.91	1.934	4.79	1.940	4.68	1.946	0.298@
4. Number series	6.20	2.676	6.01	2.711	5.34	2.698	2.789@
5. Code transformation	5.63	2.388	5.57	2.502	5.30	2.897	0.451@
6. Syllogism	4.72	1.484	4.31	1.834	4.78	1.784	2.295@
Overall perspicacity	28.80	6.124	27.40	6.421	26.69	7.350	2.025@

Note: \*\* Significant at 0.01 level, \* Significant at 0.05 level & @ Not Significant

From the table-9, it is evident that the obtained F-values with respect to word meaning (0.833), analogy (1.143), classification (0.298), number series (2.789), code transformation (0.451), syllogism (2.295) and overall perspicacity (2.025) are not significant at both levels. It indicates that the variations in prospective teachers with community background have not brought any significant difference in their perspicacity with respect to word meaning, analogy classification, number series, code transformation, syllogism and overall perspicacity. The mean values indicate that the prospective teachers with GC community background have more perspicacity (28.80), followed by the prospective teachers with OBC community background (27.40) and prospective teachers with SC and ST community background (26.69). Hence, the formulated hypothesis, “There exists into significant difference in perspicacity of prospective teachers due to variation in community” is accepted for word meaning, analogy, classification, number series, code transformation, syllogism and overall perspicacity.

From the table-9, it can be concluded that the variations in community have not brought any significant difference in perspicacity of prospective teachers with respect to word meaning, analogy classification, number series, code transformation, syllogism and overall perspicacity. As per mean values, prospective teachers with GC community background have more perspicacity, followed by prospective teachers with OBC and SC & ST community background.

**Objective-10:** To find out significant difference in the perspicacity of prospective teachers due to variation in their parental income.

**Hypothesis-10:** There is no significant difference in the perspicacity of prospective teachers due to variation in their parental income.

**Table-10:** Showing F-test values of Perspicacity Scores of Prospective Teachers with different Parental Income Backgrounds.

Dimensions of perspicacity	Parental Income						F-values
	Rs 0-15,000 (N=165)		Rs 15,000-30,000 (N=115)		Rs 30,000 above (N=20)		
	Mean	SD	Mean	SD	Mean	SD	
1. Word meaning	2.38	1.551	2.71	1.672	3.20	1.749	3.070*
2. Analogy	4.18	2.078	4.28	1.762	4.45	1.802	0.208@
3. Classification	4.82	1.991	4.63	1.830	5.15	2.104	0.758@
4. Number series	5.56	2.583	5.91	2.830	6.80	2.943	2.068@
5. Code transformation	5.32	2.822	5.51	2.458	6.50	1.910	1.789@
6. Syllogism	4.67	1.948	4.53	1.528	4.20	1.166	0.737@
Overall perspicacity	26.95	6.952	27.57	6.443	30.3	6.761	2.236@

Note: \*\* = Significant at 0.01 level, \* = Significant at 0.05 level & @ = Not Significant

Table-10 shows that the obtained F-values with respect to analogy (0.208), classification (0.758), number series (2.068), code transformation (1.789), syllogism (0.737) and perspicacity (2.236) are not significant at both levels. It means parental income has not significantly influenced the perspicacity of prospective teachers with respect to analogy, classification, number series, code transformation, syllogism and overall perspicacity. Further, the mean values also reveal that the prospective teachers with parental income Rs 30,000 above, have more perspicacity (30.30), followed by prospective teachers with parental income Rs 15,000-30,000 (27.57) and prospective teachers with parental income Rs 0-15,000 (26.95).

Contrary to this, the F-value with respect to word meaning (3.070) is significant at 0.05 level. It means parental income has significantly influenced the perspicacity of prospective teachers with respect to word meaning. Hence, the formulated hypothesis, “There exists no significant difference in perspicacity of prospective teachers due to variation in parental income” is accepted for analogy, classification, number series, code transformation, syllogism and perspicacity. From the above table, it can be concluded that parental income has not significantly influenced the analogy, classification, number series, code transformation, syllogism and perspicacity of prospective teaches; whereas the parental income has significantly influenced the word meaning ability of prospective teachers. Prospective teachers with parental income of Rs 30,000 above have more perspicacity than the prospective teachers with parental income Rs 15,000-30,000 and prospective teachers with parental income Rs 0-15,000.

**Objective-11:** To find out significant difference in the perspicacity of prospective teachers due to variation in their parental education.

**Hypothesis-11:** There is no significant difference in the perspicacity of prospective teachers due to variation in their parental education.

**Table-11:** Showing t-test values of Perspicacity Scores of Prospective Teachers with Parental Education Background.

Dimensions of perspicacity	Parental Education				t-values
	Literate (N=134)		Illiterate (N=166)		
	Mean	SD	Mean	SD	
1. Word meaning	2.627	1.495	2.512	1.728	0.617@
2. Analogy	4.634	1.895	3.916	1.946	3.227**
3. Classification	4.993	1.953	4.590	1.917	1.788@
4. Number series	6.328	2.479	5.337	2.830	3.231**
5. Code transformation	5.933	2.296	5.102	2.851	2.795**
6. Syllogism	4.612	1.606	4.566	1.870	0.227@
Overall perspicacity	29.127	5.930	26.024	7.131	4.114**

Note: \*\* = Significant at 0.01 level, \* = Significant at 0.05 level & @ = Not Significant

From table-11, it clear that the stated hypothesis, “There exists no significant difference in perspicacity of prospective teachers due to variation in parental education” is rejected with respect to analogy, number series, code transformation and overall perspicacity, as the obtained t-values for analogy (3.227), number series (3.231), code transformation (2.795) and overall perspicacity (4.114) are significant at 0.01 level. It implies that the parental education has significantly influenced the teaching aptitude with respect to analogy, number series, code transformation and overall perspicacity.

Contrary to this, the obtained t-values for word meaning (0.617), classification (1.788) and syllogism (0.227) are not significant at both levels. It means, prospective teachers have not differed in their word meaning, classification and syllogism due to variation in parental education. The mean value of prospective teachers with literate parents (29.127) is greater than the mean value of prospective

teachers with illiterate parents (26.024). It implies that prospective teachers with literate parents have more perspicacity than the prospective teachers with illiterate parents.

It can be summed up that the prospective teachers’ perspicacity with respect to analogy, number series, code transformation and overall perspicacity are significantly influenced by the parental education. On the other hand, the prospective teachers’ perspicacity with respect to word meaning, classification and syllogism are not significantly influenced by the parental education. Further, it also implies that prospective teachers with literate parents have more perspicacity than the prospective teachers with illiterate parents.

**Objective-12:** To find out significant difference in the perspicacity of prospective teachers due to variation in their marital status.

**Hypothesis-12:** There is no significant difference in the perspicacity of prospective teachers due to variation in their marital status.

**Table-12:** Showing t-test values of Perspicacity Scores of Prospective Teachers with Marital Status.

Dimensions of perspicacity	Marital Status				t-values
	Married (N=96)		Unmarried (N=204)		
	Mean	SD	Mean	SD	
1. Word meaning	2.427	1.456	2.627	1.700	1.052@
2. Analogy	3.677	1.771	4.500	1.984	3.610**
3. Classification	4.708	1.903	4.799	1.961	0.381@
4. Number series	5.323	2.870	5.995	2.624	1.944@
5. Code transformation	5.271	2.756	5.569	2.593	0.890@
6. Syllogism	4.323	1.610	4.711	1.809	1.869@
perspicacity	25.729	6.941	28.201	6.585	2.925**

Note: \*\* = Significant at 0.01 level, \* = Significant at 0.05 level and @ = Not Significant

From the table-12, the obtained t-values for word meaning (1.052), classification (0.381), number series (1.944), code transformation (0.890) and syllogism (1.869) are not significant at both levels. It means, marital status has not significantly influenced the word meaning, classification, number series, code transformation and syllogism.

On the contrary, the t-values for analogy (3.610) and perspicacity (2.925) are significant at 0.01 level. It means, marital status has significant influence on analogy and overall perspicacity. Further, it is observed through the mean values that the unmarried prospective teachers have more perspicacity (28.201) than the married prospective teachers (25.729). Thus, the stated hypothesis, “There exists no significant difference in perspicacity of prospective teachers due to variation in marital status” is rejected only for analogy and overall perspicacity.

From the abovetable-12, it can be concluded that the prospective teachers’ analogy and overall perspicacity have been significantly influenced by their marital status; whereas, prospective teachers’ word meaning, classification, number series, code transformation and syllogism have not been significantly influenced by their marital status. The unmarried prospective teachers have more perspicacity than the married prospective teachers.

**Educational implications**

- i. Perspicacity of prospective teachers reflects in terms of variety of considerations: being well adopted, being flexible, versatile, quick, effective, efficient, being able to make duteous to reach a certain goal, coping successfully with an environment, being able to deal with new situations and being able to look ahead. Hence, the teacher education programme should attract the perspicacious candidates into the teaching field.
- ii. Perspicacious prospective teachers are expected to exhibit intelligent behaviour in terms of sensing-thinking-acting cycles. They perform the activities well even though activities are

associated with difficulty, complexity, abstraction and economy. They should have been engaged actively in analysis, skills promotion and the various strategies for acquiring information.

- iii. Perspicacious prospective teachers and teachers are viewed as quick-witted, acute, keen, sharp, canny, astute, bright and brilliant in real classroom situations. They may early solve the classroom problems, acquire the knowledge and apply the knowledge in suitable circumstances. They may understand concrete and abstract concepts and relationships among objects and ideas.

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