

A Study On Cognitive Ability And Personality Traits Of Higher Secondary Students In Kanyakumari District

K. M. BASIL GAGARIN, Research Scholar, Reg.No. 12541, Department of Education, Manonmaniam Sundaranar University, Abishekappatti, Tirunelveli – 627012, TamilNadu, India.

Dr. K.R. SELVA KUMAR, Assistant Professor, Department of Education - DD &CE (B.Ed), Manonmaniam Sundaranar University, Abishekappatti, Tirunelveli – 627012, TamilNadu, India.

Abstract

Personality traits should vary depending on the demands and opportunities of learning environment. Cognitive ability is the major predictor of Personality traits. To investigate the associations between personality traits and cognitive ability, Big Five personality traits inventory and cognitive ability test were used. Objective used is to find out the significance and association of personality traits and cognitive ability based on class, sex and ordinal position. Null hypothesis is used for the study. Data were collected from 1200 higher secondary school plus one and plus two students of Kanyakumari district. T test and Pearson's product moment correlation method were used for analysing the data. The study revealed that significant relationship between personality traits and cognitive ability based on sex and low correlation for class XII students. This study on association of personality traits and cognitive ability helps in improving learning environment of school students.

Key words:

Personality Traits, Cognitive Ability, Higher secondary

Article Received: 18 October 2020, Revised: 3 November 2020, Accepted: 24 December 2020

INTRODUCTION

Personality as the term indicates various senses, the first and most used sense is social, which means his effectiveness. Individual is able to elicit operative reactions from a second sense, considers the personality of an individual to consist of the most outstanding or salient impression that he or she created in others, such as aggressive personality, fearful personality, submissive personality put them in to biosocial. The biosocial definition maintains close correspondence with the popular use of the term since it considers personality as the social "stimulus value" of the Individuals. It is the reactions of other individuals to the subject, which defines his personality. In other words, it may be said that the individual possesses no personality except the one provided by the response of others. According to Eysenck, "The more or less stable and enduring organization of a person's character, temperament, intellect, and physique that determines his unique adjustment to his environment is named personality."

Allport has rightly said, "Personality is what a person really is. From now of view, personality means those qualities, which cast their

influence on others. How an individual affects other person with whom he come contact or the effect or influence which an individual leaves on other people is called personality. It is also understood that personality is the stimulus value which one individual has for others or the total picture of an individual's organized behavior." Personality has an organic side as well as a perceive side and may be linked to specific qualities of the individual which are susceptible to objective description and measurement. What a person, what he thinks and experiences, what virtue and vices he possesses are manifested through his behavior and speech. 'Personality' is no single trait and 'quality' of a person. The personality of a person is a mirror of his completely organized behavior patterns. Every person features a particular personality of his own. This means a child has his own individual personality, which cannot be molded into a specified pattern

Personality traits are characteristics of human behaviour that can be used to differentiate one person from another. Significance of the traits is a builder of one's personality. The cause of education in putting right attempts for the

development of desirable traits changes the behaviour of the children. Traits produce coherence in behavior, because they connect and unite a person's reactions to a variety of stimuli. Traits may act as intervening variables, relating sets of stimuli and responses that might seem, at first glance, to have little to do with each other. Traits are generalized action tendencies that people possess in varying degrees; They lend coherence to a person's behavior in different situations and over time.

Personality includes all the behaviour patterns conative, cognitive, and affective, covers the conscious, unconscious, and sub conscious activities. The growth and development of the mental abilities and capacities, which helps an individual to adjust his behaviour to the ever-loving changing environmental conditions, needs the complex cognitive abilities. The process of cognitive growth and development is responsible to the development of individuals all cognitive abilities like sensation, perception, imagination, memory, reasoning, language ability, problem solving and decision-making ability etc.

Cognition comes from Latin word cognoscere, which implies 'getting to know' is that, the tactic of knowing and exploits data of various mental activities. Science is that the study of psychological feature processes like attending, thinking, memory deciding, reasoning, and downside resolution. It is a well-developed branch of science. It is necessary that educational psychologists so on understand the mental processes study the psychological feature processes. In turn, the data of cognitive process could also be applied at intervals the sphere of education. Psychological feature abilities area unit controlled by the brain which enable a personal to carry out many different tasks from easy to very advance. Psychological feature abilities at its simplest kind, higher order thinking abilities embrace psychological feature thinking of downside resolution, higher process, critical, logical, reflective, metacognitive, and ingenious thinking (Sternberg, 2006). They are activated once folks encounter unacquainted problems, uncertainties, questions, or dilemmas. Booming applications of the abilities promote continued growth in intellectual skills. Acceptable teaching ways and learning environments facilitate psychological feature growth. Therefore, higher order thinking skills, learned and developed.

Cognition could also be an assortment of mental processes that has awareness, perception, reasoning, and judgment. The study of

psychological feature processes is based on the Gestalt psychology of grievous bodily damage Wertheimer, Wolfgang Köhler, and Kurt Koffka and at intervals the studies of Jean Piaget on psychological feature development in children. Psychologist (1923) implies that temperament comprised of three sides each with a time descriptor. Perspective can vary from sociability (outgoing personalities) to introversion (personalities targeted inward). Perception deals with a person's technique of understanding stimuli; associate intuitive person is meaning-oriented whereas a sensory person is detail minded. Judgment deals with a person's approach in making decisions; a thinking person tends to be analytical and logical whereas a way person tends to gauge supported values.

"Adolescence marks the beginning of the event of further advanced thinking processes along with abstract thinking, the ability to reason from acquainted principles the ability to believe many points of scan in line with variable criteria and so the power to position confidence within the methodology of thinking" (Kail & Miller, 2006). Changes within the brain act expertly, knowledge, and social demands that brings into being quick psychological feature growth in adolescents. Adolescents progress at variable rates in developing their ability which are further advanced. Jean Piaget describes adolescence because of the stage, at intervals that the individual thoughts associate abstract kind and egocentric thoughts decrease (Kathleen, 2009). Throughout this era, a personal can assume flexibly enough regarding the social world. They move in divinatory synthesis (Suhail & Bapat, 1999). Intellectual development takes into thought, the event of various mental abilities and capabilities.

Two basic assumptions that underlie formal education systems are that youngsters retain data and skills they acquire in school, and may apply them in things outside the space. It is found that even once students do not use the any genetic data in school, hefty portion of learning is maintained for many years and enthusiastic about the initial learning. Psychological feature theories claim that memory structures ensure but information is perceived, processed, stored, retrieved, and forgotten. The spaced learning result, a psychological feature development powerfully supported has broad applicability within education. a baby is assumed to interpret a problem by assessing it to a schema retrieved from memory.

Cognitive development could also be a field of study, specializing in a very child's development in terms of knowledge method, abstract resources, activity talent, acquisition, and various aspects of brain development. There is a heavy concern of culture and social experience relate to biological process changes in thinking. The mechanism of physical growth and development brings fascinating changes at intervals the inner additionally as external body organs of a personal therefore on extend his/her physical talent and strength. Because of this development, the child is prepared to undertake to physical work and to play games that he/she could not, once younger. The growth and development of the mental abilities helps a personal to manage one's behavior to the ever-dynamic environmental conditions and it permits the child to accomplish a task that wishes advanced psychological feature abilities.

The process of the mental growth is liable for the event of associate individual's all psychological feature, mental or intellectual abilities like - sensation, perception, imagination, memory, reasoning, understanding, intelligence, generalization, interpretation, language ability, abstract ability or necessary thinking ability, downside resolution ability, and better process ability. These abilities area unit are interconnected and never develop in isolation. Psychological feature development of a personal at any stage of development includes the event of these abilities.

NEED AND SIGNIFICANCE OF THE STUDY

Personality traits are generalized action tendencies that people possess in varying degrees. They lend coherence to a person's behaviour in different situations and over time. Traits are enduring dimensions of personality characteristics differentiating people from one another in order to evaluate situations in a predictable manner. It means that a person has his own individual quality of a particular kind of behaviour. Personality traits of an individual are often associated with many factors such as hereditary or biological, family, school, and society, mental, physiological, and physical. A trait is present in all or almost all people, but in varying degrees. One personality trait often associated with introversion—the terms shy, quiet, and sensitive often refer to this. The general theory is that the child with introversion is more inner focused because of reduced stimulation from the outside world. They may withdraw from peer interactions due to this inner focus, the extra effort demanded in communicating, or simply due to the alienating feeling of "being different." We

should not leave a large number of frustrated children as a burden to society. A majority of such children can become, with a little assistance and economically productive. Education for all is an ideal of critical significance for the developing countries. Today education is mark oriented and is unaware of the personality traits of the students.

Cognitive ability to some extent depends on the type of personality traits. Personality traits are helpful to bring clearly the effect of these variables among the higher secondary school students. The higher secondary students with a good cognitive ability and personality traits are able to become good citizen. A student who has a better understanding of him/her is able to determine his choices so that they can develop their personality traits in relationship with cognitive ability. The personality of the teacher, the richness, or drabness of the curriculum, the presence of curricular Activities, the method, the nature of school organization affect the cognitive ability of students. Particularly the type of discipline that prevails and the personality of classmates/friends –all of these affect the child's personality. To lead a successful life, it is essential that a person possess better personality traits. It is only a person with good personality traits could succeed in life. So here, the investigator is interested to find out whether the cognitive ability influence or determine the personality traits of higher secondary school students and the relationship between cognitive ability and personality traits of different variables. It is in this context the investigator has chosen such a topic for the research article and hence the need and significance of the study.

OBJECTIVES

- To find out the significant difference between personality traits of higher secondary students with respect to age, sex and ordinal position.
- To find out the significant difference between cognitive ability of higher secondary students with respect to age, sex and ordinal position.
- To find out the relationship between personality traits and cognitive ability based on class.
- To find out the relationship between personality traits and cognitive ability based on sex.
- To find out the relationship between personality traits and cognitive ability based on ordinal position.

HYPOTHESIS

- There is no significant difference between personality traits of higher secondary students with respect to age, sex and ordinal position.
- There is no significant difference between cognitive ability of higher secondary students with respect to age, sex and ordinal position.
- There is no relationship between personality traits and cognitive ability based on class.
- There is no relationship between personality traits and cognitive ability based on sex.
- There is no relationship between personality traits and cognitive ability based on ordinal position.

METHOD

The present study aims to find out the relationship between personality traits and cognitive ability of higher secondary school students in Kanyakumari district, Normative Survey method was found to be more appropriate method for the study and hence normative survey method was used. The sample selected for this study is 1200 higher secondary students from

various schools of Kanyakumari district. Personality traits inventory and cognitive ability test were the tools used for this study. The investigator administered Big Five Personality Traits Inventory to 1200 higher secondary school students under standardized condition. The cognitive ability test was also conducted to the same students and data were collected. The collected data are subjected to further statistical analysis in order to verify the hypothesis and to make generalizations.

STATISTICAL TECHNIQUES

The main statistical techniques used are

- t-test
- Karl Pearson's product moment correlation

ANALYSIS OF PERSONALITY TRAITS AND COGNITIVE ABILITY OF HIGHER SECONDARY STUDENTS BASED ON CLASS, SEX AND ORDINAL POSITION

To determine whether variables class, gender and ordinal position, differs with regard to personality traits and cognitive ability, the differential effects of variables were analyzed.

Hypothesis: 1

There is no significant difference between the personality traits of higher secondary students based on Class, Sex and Ordinal position

Table 1

Significant Difference among higher secondary students in their personality traits basedon class, sex and ordinal position

<i>Variable</i>		<i>N</i>	<i>Mean</i>	<i>S. D</i>	<i>t value</i>	<i>Remarks at 5% level</i>
<i>Class</i>	<i>XI</i>	600	150.07	18.13	1.104	Not Significant
	<i>XII</i>	600	151.28	19.81		
<i>Sex</i>	<i>Male</i>	600	151.8000	19.92440	2.055	Significant
	<i>Female</i>	600	149.5500	17.96121		
<i>Ordinal Position</i>	<i>1st born</i>	516	150.73	19.96	0.091	Not Significant
	<i>Latter born</i>	684	150.63	18.24		

(At 5% level of significance, the table value of 't' is 1.96)

It is inferred from the table that the calculated value of 't' is greater than the table value at 5% level of significance for Sex and less than the table value for Class and Ordinal Position, and hence the

null hypothesis is accepted on class and ordinal position and rejected on Sex.

Hypothesis: 2

There is no significant difference between the cognitive ability of higher secondary students based on Class, Sex and Ordinal position

Table2
Significant Difference among higher secondary students in their cognitive ability based on class, sex and ordinal position

<i>Variable</i>		<i>N</i>	<i>Mean</i>	<i>S. D</i>	<i>t value</i>	<i>Remarks at 5% level</i>
<i>Class</i>	<i>XI</i>	600	31.42	6.35	2.62	Significant
	<i>XII</i>	600	32.38	6.33		
<i>Sex</i>	<i>Male</i>	600	32.01	6.24	0.617	Not Significant
	<i>Female</i>	600	31.78	6.48		
<i>Ordinal Position</i>	<i>1st born</i>	516	31.2946	5.76350	2.821	Significant
	<i>Later born</i>	684	32.3567	6.74802		

(At 5% level of significance, the table value of 't' is 1.96)

It is inferred from the table that the calculated value of 't' is greater than the table value at 5% level of significance for class and ordinal position and less than the table value for sex, and hence the null hypothesis is rejected on class and ordinal position and accepted on Sex.

Correlation Analysis of Personality traits and Cognitive ability based on Variables Class, Sex and Ordinal Position

In order to find out whether there is any relationship between Personality traits and Cognitive ability of higher secondary school students, the correlation was computed and details are presented.

Hypothesis: 3

There is no relationship between personality traits and cognitive ability of higher secondary students based on Class

Table 3
Correlation between Personality traits and Cognitive ability of higher secondary students based on class

<i>Variable</i>		<i>Sample</i>	<i>r</i>	<i>Fisher's t</i>	<i>Standard error of estimate (Ser)</i>	<i>Shared Variance</i>	<i>Verbal Interpretation</i>	<i>Significance</i>
<i>Class</i>	<i>XI</i>	600	0.11	1.787288	0.061546	1.21	Indifferent or negligible relationship	Not Significant
	<i>XII</i>	600	0.227	3.688313	0.061546	5.1529	Low relationship	Significant

It is inferred from the table that there is Negligible relationship between Personality traits and Cognitive ability of Higher Secondary School students of Class XI, and Low relationship for Class XII. The relationship between the two variables Personality traits and Cognitive ability is

not significant at 0.05 for Class XII and Significant for Class XI.

Hypothesis: 4

There is no relationship between personality traits and cognitive ability of higher secondary students based on Sex

Table 4
Correlation between Personality traits and Cognitive ability of higher secondary students based on Sex

Variable		Sample	r	Fisher's t	Standard error of estimate (SER)	Shared Variance	Verbal Interpretation	Significance
Sex	Male	600	0.88	14.29831	0.061546	77.44	High relationship	Significant
	Female	600	0.72	11.69862	0.061546	51.84	High relationship	Significant

It is inferred from the table that there is High relationship between Personality traits and Cognitive ability of Higher Secondary School students of Male and female. The relationship between the two variables Personality traits and Cognitive ability is significant at 0.05 for Sex

Hypothesis: 5

There is no relationship between personality traits and cognitive ability of higher secondary students based on Ordinal Position.

Table 5
Correlation between Personality traits and Cognitive ability of higher secondary students based on Ordinal Position

Variable		Sample	r	Fisher's t	Standard error of estimate (SER)	Shared Variance	Verbal Interpretation	Significance
Ordinal Position	1 st Born	516	0.141	2.290979	0.061546	1.9881	Indifferent or negligible relationship	Not Significant
	Later Born	684	0.054	0.877396	0.061546	0.2916	Indifferent or negligible relationship	Not Significant

It is inferred from the table that there is Negligible relationship between Personality traits and Cognitive ability of Higher Secondary students based on ordinal position. The relationship between the two variables Personality traits and Cognitive ability is not significant at 0.05 on ordinal position.

FINDINGS OF THE STUDY:

The major findings of the study are,

- Personality Traits are significant for Sex and not significant for Class and Ordinal Position of higher secondary students.
- Cognitive ability is significant for Class and ordinal position and not significant for sex of higher secondary students.

- Correlation analysis reveals that there is Negligible relationship between Personality traits and Cognitive ability of Higher Secondary School students of Class XI, and Low relationship for Class XII. The relationship between the two variables Personality traits and Cognitive ability is not significant at 0.05 for Class XII and Significant for Class XII.
- There is High relationship between Personality traits and Cognitive ability of Higher Secondary Male and female students. The relationship between the two

- variables Personality traits and Cognitive ability is significant at 0.05 for Sex
- There is Negligible relationship between Personality traits and Cognitive ability of Higher Secondary students based on ordinal position. The relationship between the two variables Personality traits and Cognitive ability is not significant at 0.05 on ordinal position.

EDUCATIONAL IMPLICATIONS OF THE STUDY

Education today aims to raise the standard of living than to raise the standard of life. The school is considered to be important to pupils. It is necessary for parents and teachers to know from time to time how the pupils are progressing and what their attainments are at any particular stage. It is equally necessary for society to assure itself that the work entrusted to its school is being carried on satisfactorily and that the children studying there are receiving the right type of education and attaining the expected standards. It is through test and examinations that we assess how far the pupils have possessed the required level of cognitive ability and their personality which is the require standards in education.

The present study aimed to understand the association between cognitive ability and personality traits of higher secondary school students. India is making rapid progress in field of education. Education is a complex process and it aims at the overall development of an individual. The teacher plays an important role in molding the personality of students and enhance the cognitive skills as well. The students are influenced to a great extent by the teacher's personality. The extent of which the teacher can succeed in influencing and improving the child's personality depends upon their own.

The study about student's personality traits is significant for their class of study and ordinal position. Teachers and parents can help the students to increase their level of personality, train them to increase their memory power and problem-solving skill. By knowing the needs and problems of students the teachers and educational administrators can prepare dynamic curriculum, school practices and methodology of teaching to suit their conditions based on personality and cognitive skills.

The present investigation reveals that there is positive relationship between personality traits and cognitive ability of higher secondary school students. Contemporary education and psychological researchers have shown great

concern over problems which tend to identify factors which determine educational performance of children. Most of the researches have been centered round the academic achievement in regard to cognitive skills related to the personality traits.

The adolescents have extremely short-range goals; he/she is much more interested in immediate wants and needs than in any possible benefits in the future. Higher secondary school students are in the adolescent stage. Many of the higher secondary school students are egocentric, intolerant, socially withdrawn, dependent, lacking in understanding, hypersensitive, less suspicious, fearful, deficient in sympathy, unable to express themselves, pugnacious, apathetic and listless, subject to uncontrolled motor outbursts, easily discouraged, easily fatigued, rigid in their adjustment to life, introverted, socially retarded, inclined to think in class concepts, more pragmatic and less imaginative, conceited and lacking powers of self-criticism, deficient in reasoning ability, unconcerned about their achievement, unconsciously wishing they could heal, preoccupied with power aspirations, in danger of maladjustment, likely to become better adjusted with the passage of time, and likely to become more poorly adjusted with the passage of time.

To enable students to feel special, teachers can assist every student to become an expert at something, can identify something they can do well, and also, they can explicate the skills. Teaching students as special will develop their capacities for success. Moreover, teacher should take the time to explore each student's gift and talents. It is the duty of the teacher to provider opportunities in the classroom for students to share their resident expertise. Show them that they are valued member of a community of learners. They should be reinforced so that can make a real contribution to their community.

CONCLUSION

The study provides strong indications about the association between personality traits and cognitive ability in accordance with class, sex and ordinal position. It is hoped that the findings of the study help the teachers and students to understand more about personality traits and Cognitive ability to handle the demand of education in classrooms. To short, it is hoped that the results of the study would be useful to all concerned with education and management of higher secondary students.

REFERENCES

- Allport, G. W., & Odber, H. S. (1936). Trait names: A psychological study. *Psychological Monographs*, 47, 211.
- Andreas Georgiadis, Liza Benny, Le Thuc Duc, Sheikh Galab ,Prudhvikar Reddy,Tassew Woldehanna (2017). Growth recovery and faltering through early adolescence in low- and middle-income countries: Determinants and implications for cognitive development. *Social Science & Medicine*. Volume 179, pp.81- 90
- Ashton, M. C., & Lee, K. (2007). Empirical, theoretical, and practical advantages of the HEXACO model of personality structure. *Personality and Social Psychological Review*, 11, 150–166.
- Caspi, A., Roberts, B. W., & Shiner, R. L. (2005). Personality development: Stability and change. *Annual Reviews of Psychology*, 56, 453–484.
- Craig, Enders. Et Al. (2011). The Effects of Cognitive Strategy Instruction on Math Problem Solving Of Middle School Students with Learning Disabilities. *Learning Disability Quarterly*, Volume (34), pp. 262-272.
- Donnellan, M. B., Oswald, F. L., Baird, B. M., & Lucas, R. E. (2006). The mini-IPIP scales: Tiny-yet-effective measures of the Big Five factors of personality. *Psychological Assessment*, 18, 192–203.
- Eysenck, H. J. (1981). *A model for personality*. New York: Springer Verlag.
- Goldberg, L. R. (1990). An alternative description of personality: The Big Five personality traits. *Journal of Personality and Social Psychology*, 59, 1216–1229.
- Gray, J. A. (1981). A critique of Eysenck's theory of personality. In H. J. Eysenck (Ed.), *A Model for Personality* (pp. 246–276). New York: Springer Verlag.
- Gray, J. A. & McNaughton, N. (2000). *The neuropsychology of anxiety: An enquiry into the functions of the septo-hippocampal system (second edition)*. Oxford: Oxford University Press.
- Jennifer, Krawec. & Marjorie, Montague. (2014). A study on the role of teacher training in cognitive strategy instruction to improve math problem solving. *Learning Disabilities Research & Practice*, Volume. (29), pp. 126-134.
- Jyoti Raina (2011). Perspectives in learning and cognition from history of epistemology. *Indian Educational Review*, Volume 49 Number 2, pp. 30-40.
- Jyoti Raina (2011). Perspectives in learning and cognition from history of epistemology. *Indian Educational Review*, Volume 49 Number 2, pp. 30-40.
- Lalit, K. and Pusplata, K. (2016). A study of convergent thinking and divergent thinking among secondary school students in relation to ethnicity, locale, types of institutions and sex. *Journal of Indian Education*. Volume XXXXI, Number4. pp. 111-124.
- Matthews, G., Deary, I. J., & Whiteman, M. C. (2003). *Personality traits*. Cambridge, UK: Cambridge University Press.
- McCrae, R. R., & Costa, P. T. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology*, 52, 81–90.
- McCrae, R. R. & John, O. P. (1992). An introduction to the five-factor model and its applications. *Journal of Personality*, 60, 175–215.
- Mischel, W. (1968). *Personality and assessment*. New York: John Wiley.
- Paunonen, S. V., & Ashton, M. S. (2001). Big five factors and facets and the prediction of behavior. *Journal of Personality and Social Psychology*, 81, 524–539.
- Roberts, B. W., Kuncel, N. R., Shiner, R., Caspi, A., & Goldberg, L. R. (2007). The power of personality: The comparative validity of personality traits, socioeconomic status, and cognitive ability for predicting important life outcomes. *Perspectives on Psychological Science*, 2, 313-345.
- Samuel P Scott, Laura E Murray-Kolb, Michael J Wenger, Shobha A Udupi, Padmini S Ghugre, Erick Boy, Jere D Haas (2018). Cognitive Performance in Indian School-Going Adolescents Is Positively Affected by Consumption of Iron-Biofortified Pearl Millet: A 6-Month Randomized Controlled Efficacy Trial. *The Journal of Nutrition*, Volume 148, Issue 9, Pp. 1462–1471.