

Studying the Effect of Cognitive Difficulty of Students on their Academic Achievement.

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Abstract

To build own personality, society and the nation one always endeavor by giving his best to achieve more and more. The present research study was conducted to find out the Effect of Cognitive Difficulty of students on their Academic Achievement of different Higher Secondary students of district Jammu of J&K state with reference to their locality and type of school. Cognitive difficulty is among the fundamental factors which may affect the academic achievement of students through different angles. To accomplish the study researcher employed descriptive research design and collected the data from a sample of 300 Government and Private school students selected from 8 Higher Secondary schools by applying simple random sampling technique. In this research study ANOVA as a statistical technique was used to analyze the data. The result of the study reveals that Cognitive difficulty plays a very gigantic role in determining the Academic Achievement of students.

Keywords: *Cognitive Difficulty, Functional Disability, Clinical Disability and Academic Achievement*

Introduction**Cognitive Difficulty**

In day to day living human beings suffer through diverse miseries that can be originated from their cognition. No one is perfect in the world also implies that everyone faces some kind of problem which may or may not be solved by them. The number of unsolved questions in any discipline exhibits the dominance of cognitive difficulties. The concept of Cognitive difficulty is progressively apprehensive and not defined in well manner. The various emerging problems and issues due to cognitive difficulty are lack of concentration, inadequate attention, problems associated with perception, difficulty with reading, remembering, counting, checking, memorizing, problem solving and general awareness etc. T. G. Bever and Jaques Mehler who are the founders of the term Cognition also asserts that cognitive difficulty refers to the problems in learning, reasoning and decision making etc.. Jean Piaget described cognitive development as an advancement concerning rationality by the creation of sound configurations underlying behavior, however his account of the egocentric and intuitive thinking of young children's inability to synchronize different points of view and dimensions booms Baldwin's conception of a restricted span of attention in children. So from the above little discussion about cognitive development it is revealed that developmental psychologists deduced most of the developmental differences between children and adults would come from the inadequate capacity of the situations they are met with and attempt to comprehend. The main idea of the doctrines of the neo-Piagetian theories is that cognitive exercises execute a load to the processing system (Morra, Gobbo, Marini, & Sheese, 2008).The cognitive difficulty impedes the day to day functioning and personality

development of students as a whole. In addition the said term also becomes a hurdle in the adjustment process and is likely to lead maladjustment. It is found by the psychologists that there is no one right direction to study cognition. All the processes of cognition must be studied through a variety of covering operations and there are several motives and concerns with respect of cognitive difficulty that becomes obstacle in analyzing and identifying it. The study of Cognitive psychology includes all the processes which bearing the mental effect and covering all the mental activities. According to the cognitive psychology both the mind and brain systems developed through evolution. The mind and brain have some common and specific functions that assist us in reproducing as organisms successfully.

Generally there are two types of cognitive disabilities which are clinical and functional disability. Clinical disability includes autism, Down syndrome, traumatic brain injury (TBI), and even dementia. In this regard least severe cognitive disabilities include generally attention deficit disorder (ADD), dyslexia (difficulty reading), dyscalculia (difficulty with math), and learning disabilities. These disabilities are treated through medical perspective but for web accessibility realizing cognitive disabilities by functional disability is of much utility. On the other hand clinical diagnoses are not mutually elite in conditions of what difficulties people face. The various types of difficulties emerged from functional cognitive disability are in memory, problem solving, attention, reading, linguistics and verbal comprehension. From birth to the end of adolescence the corollary increase in knowledge, skills and abilities are perhaps among the most conspicuous phenomenon that can be studied in natural sciences. From the beginning till become the mature organism the physical growth is by itself amazing, and even the cognitive development is likely more inspiring as distinctive and exclusive to our species and looks like as the chief element of the prolonged development period that exemplifies and characterizes Homo sapiens. We come to know and understand the world by perceiving and sensing the environment. Our sensory systems are continuously assaulted and shelled by sights, sounds, smells and other signals from the external environment. According to the contemporary experimental cognitive psychology the general processing capacity is defined as the capacity of working memory to sustain information as provisionally dynamic and ready for treatment in face of any disrupting events, working memory is considered as to be the “workbench of cognition” (Jarrold & Towes, 2006). So cognitive difficulty not only hampers the cognitive development of students but also affective and psychomotor development as well.

Academic Achievement

The effectiveness of teaching learning process is evaluated and assessed by the achievement of students. The quality of education in a society is being improved and enhanced by its achievement of students. Achievement exhibits the success and gain of learning and displaying the interest, readiness and motivation. The term academic achievement having inclusive scope concealments the extensive collection of aims and objectives of education. The intellectual, emotional and environmental are the fundamental factors which greatly influences the academic achievement of students. After from various surveillances and investigations it is found, that learners sited in an identical set of academic settings differ in their educational achievement. No two individuals are alike and everyone in the world is unique and different in every respect. An individual goes through different stages of development, and through these developmental stages both cognitive and non-cognitive areas are smoothly improved and developed which in reflect accrues their academic performance. The outcome of education determines the quality of life, progress and

status of people living anywhere in the world (Mayuri & Devi, 2003). The students having good intelligence always achieve more and more rather than those who have not, and it bears its impact on their comprehension, abilities, skills, aptitudes, reasoning and problem-solving etc. Academic achievement is considered as one of the fundamental goals by every school such as from pre-nursery to higher education.

Present world is the world of science and technology and it is endeavored in every day school activity that the students should be given opportunities to get more in order to enhance their personal progress and the nation as a whole. The usage of educational technologies wholly changed the image of education system which results in good performance of students. In this world of competition education looks for playing a fundamental role in society and academic achievement, is thought has become a central and main topic of educational research. In the field of education an achievement is the amount of knowledge or skills that a child has learnt in a particular field or subject (Kumar, 2013). Now a day's academic achievement becomes a central aim of educational institutions and in our society it is directed to judge and analyze one's abilities and potentials. Academic achievement is based on number of factors such as interest, readiness, motivation, aptitude, developmental stage of student etc. Achievement refers to the extent to which a learner gets profit from instructions in a given area of learning i.e. achievement is reflected by the extent to which knowledge or skill has been acquired by a person from the training imparted to him. It is the quality of academic achievement of students by which their competence, proficiency, efficiency, productivity and deficiency, ineffectiveness, hopelessness etc. are identified. Academic achievement is well thought out as the milestone in the evolution and progress of educational system. In other words, academic achievement may be defined as the competence students actually show in school subjects in whom they have received instruction (Sing, 2012). The academic achievement variable plays a gigantic role in determining and obtaining the harmonious development of personality of student. In the age of science various technologies were invented in the field of education, because of that parents now a day's determine the sky touching goals for their children. So in the educational globe the inclusive struggle of education is to enhance the academic performance of students.

Significance of the Study

Dominance of science and technology has changed the life scenario and shifts our world of thought from very conventional to modern. Everything is demanded after identifying and analyzing its worth and value. Education which is the powerful instrument in molding and overhauling the life of an individual, society and nation as whole. Not by its name but the value of educational process is assessed by its achievement and there are several factors having tremendous role in determining the educational achievement. Academic achievement which is the central aim of education is encouraging the students for avoiding pain and getting pleasure. Academic achievement is a central phenomenon in the whole educational process around which all the efforts and endeavors are done. Having good academic record predicts the future of child in this age of competition where the academic record is considered basis for the individual for admission to a course, for the entrance in a job, for scholarship, for further studies etc. Academic achievement is wholly based on the student's cognitive and non-cognitive factors such as, ability, motivation, family background, readiness, personality traits, intelligence and mental health and hygiene etc. Every achievement needs good health, high intelligence, much readiness, more

interest and other support systems. The cognitive development has a massive role in illuminating the future expectations and success of student, because a student having problems pertaining to the cognitions is expected for low achievement. The cognitive difficulties throws light on the problems having in attention span, perception, reading difficulty, problems in learning and in problem-solving etc. The students having difficulties relating to the cognition does also not remember things for a longer time which results in badly affecting their academic achievement. The present research focuses on displaying that academic achievement of students is necessarily effected by the difficulties having in their cognition.

Objectives of the study

1. To study the effect of Cognitive Difficulty of students on their academic achievement with reference to locality(Rural/Urban)
2. To study the effect of Cognitive Difficulty of students on their academic achievement with reference to type of school (Government/Private)

Hypotheses of the Study

1. There is no significant effect of Cognitive Difficulty of students on their Academic Achievement with reference to locality (Rural/Urban)
2. There is no significant effect of Cognitive Difficulty of students on their Academic Achievement with reference to type of school (Government/Private).

Variables Studied

1. Cognitive Difficulty (Independent Variable)
2. Academic Achievement (Dependent variable)

Research Methodology

This research study adopted a sandwich of descriptive research design. Research methodology plays a massive role in any research which becomes the reason that it is known as blue print of research. Present study employed descriptive research design to get the sample from the population through simple random sampling technique. The current research study was conducted in 8 different higher secondary schools from Jammu district of J&K state with a sample size of 300.

Tool Used

Cognitive Difficulty Scale of Dr. V.N. Yadav, Suraj Mal, Indu and Diksha by Prasad Psycho Corporation New Delhi 2016.

Reliability and Validity

As far as reliability of the construct is concerned, it was determined by test re-test method on a sample of 120 subjects and it was 0.82. The internal consistency reliability was determined by adopting odd even procedure. Using Spearman Brown formula, the reliability coefficient correlation of the test was found to be 0.89. The validity of the test was determined by correlating the scores on the present measure with the scores of Broadbent et.al. (1982) cognitive failure measure. The coefficient of correlation was .66, which was significant beyond .001 level of confidence.

Other Sources of Data

In this study the researcher collected the academic achievement of higher secondary students from the records of the concerned schools. The total marks and the marks obtained by the students in their last examination were considered as their academic achievement by the investigator.

Analysis and Interpretation

In research study the researcher should not only be acquainted with the precision of the data collection and the reliability and validity of the tools to achieve the targeted objectives and to accomplish the study but also the researcher should be acquainted with the different application of statistical analysis. In the present study ANOVA has been employed as a statistical technique.

Hypotheses of the Study

1. There is no significant effect of Cognitive Difficulty of students on their Academic Achievement with reference to locality (Rural/Urban)

ANOVA summary of hypothesis there is no significant effect of Cognitive Difficulty of students on their academic achievement with reference to locality (Rural/Urban).

Model		Sum of Squares	Df	Mean Square	F	Sig.
Rural 1	Regression	489.593	2	244.796	1.304	.275 ^b
	Residual	26654.159	142	187.705		
	Total	27143.752	144			
Urban 1	Regression	5197.836	2	2598.918	6.065	.003 ^b
	Residual	65137.931	152	428.539		
	Total	70335.768	154			
a. Dependent Variable: Academic Achievement						
a. Predictors: (Constant), Cognitive Difficulty						

From the above

analysis it is manifested that the calculated value of F is 1.304 and 6.065 which is greater than the table value at .275 and .003 level of significance which implies that there is a significant effect of cognitive difficulty of students on their academic achievement among rural and urban higher secondary students. Therefore the hypothesis there is no significant effect of cognitive difficulty of students on their academic achievement of higher secondary students with reference to locality (rural/urban) is rejected.

2. There is no significant effect of Cognitive Difficulty of students on their Academic Achievement with reference to type of school (Government/Private).

ANOVA summary of hypothesis there is no significant effect of Cognitive Difficulty of Students on their academic achievement with reference to type of school (Government/Private).

Model		Sum of Squares	Df	Mean Square	F	Sig.
Govt. 1	Regression	5456.413	2	2728.207	8.085	.000 ^b
	Residual	49605.427	147	337.452		
	Total	55061.840	149			
Pvt 1	Regression	1939.098	2	969.549	3.554	.031 ^b
	Residual	40099.575	147	272.786		
	Total	42038.673	149			
a. Dependent Variable: Academic Achievement						
b. Predictors: (Constant), Cognitive Difficulty						

It is

manifested from the above table that the calculated value of F is 8.085 and 3.554 which is greater

than the table value at .000 and .031 level of significance which implies that there is a significant effect of cognitive difficulty of students on their academic achievement of government and private higher secondary students. Therefore the hypothesis there is no significant effect of cognitive difficulty of students on their academic achievement of higher secondary students with reference to type of school (Government and Private) is rejected.

Findings

In the light of the above analysis and interpretation of the data, the investigator found that Cognitive Difficulty of students has a significant role in determining the academic achievement of students. According to the said findings it has been investigated that Cognitive Difficulty effects the academic achievement of students with reference to their locality and type of school as well.

Discussion

In digital modern India the scientific research and technologies changed the life scenario of education and an individual at both national and international levels. Research has influenced the educational process from every angle by its immense scope and implications. Academic achievement is regarded as one of the fundamental aims at national level within the realm of education that can be a measure of the achievement of the end goals of an individual's and an educational system's success in the future. Good academic achievement is the key to success in personal and professional life and it also fetch economic security and social respect. Academic achievement largely depends on the students cognitive and non- cognitive factors like, aptitude, achievement motivation, socio-economic conditions, attendance, personality traits and teaching learning methods. Cognitive difficulty of students refers to their problems having in general awareness, concentration attention, perception, and reading difficulty, learning, memory and problem solving. Forgetting is another main factor of cognitive psychology which has an immense role in determining the cognitive difficulty of students at different levels.

References

- Altun, A., & Cakan, M. (2006). Undergraduate students' academic achievement, field dependent/independent cognitive styles and attitude toward computers. *Journal of Educational Technology and Society*, 9, 289.
- Annaraja, P. (1993). The effect of Psycho-socio factors on Academic achievement. *Sixth Survey of Research in Education. NCERT-2001*.
- Augustin de Coulon & Elena M. & Anna V. (2011). "Parents' skills and children's cognitive and non-cognitive outcomes," *Education Economics. Taylor & Francis Journals, vol. 19(5), pages 451-474, July*.
- B. Winblad, K. Palmer et.al. (2004). Mild cognitive impairment – beyond controversies, towards a consensus. *International Working Group on Mild Cognitive Impairment. Volume 256, Issue 3, Pages: 179-270*
- Crow, R. D. and A. Crow, (1992). *Educational Psychology*. American Book Co., N.Y., USA.
- Leeson, Peter, Joseph Ciarrochi and Peatrick C. L. Heaven (2008). Cognitive Ability, Personality and Academic Performance in Adolescence. *Personality and Individual Differences, 45, 63*.
- Lisa C. McGuire, Earl S. Ford, Umed A. Ajani (2006). Cognitive Functioning as a Predictor of Functional Disability in Later Life, Volume 14, Issue 1, Pages 36- 42.

- Ross, M.C. (1999).The relationship among academic achievement motivation, motivation orientation and ability achievement differences in reading. *Dissertation Abstracts International*, 60(11), 292.
- Rui Nouchi and Ryuta K. (2014).Improving Cognitive Function from Children to Old Age: A *Systematic Review of Recent Smart Ageing Intervention Studies, Volume 2014 (2014)*, Article ID 235479, 15 pages.
- Wang Meifang, Sun and Dan Xing (2009). Intelligence, Achievement Goals and Academic Achievement of Rural Adolescents: Cross-Lagged Regression Analysis, Psychological Research. *Retrieved from internet, en.enki.com.cn.*