

# A STUDY OF ACADEMIC ACHIEVEMENT OF 10+1 STUDENTS IN RELATION TO THEIR METACOGNITION

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## INTRODUCTION

Education is the process of developing the capacities and potentialities of individual so as to prepare that individual to be successful in a specific society or culture. From this perspective, education is serving primarily as an individual development function (Kumar, 2013). Human beings are positive assets and precious natural resources, which needs to be cherished, nurtured and developed with care and dynamism. Education is an important factor that helps in bringing about various changes in human beings and also to the society. Education is meant to make one's life civilized, cultured and progressive in real sense. It helps a person to draw the best out of one's mind and spirit. It makes a person rational, innovative, constructive, right thinker, intelligent, independent and creator of new values. Education is the process of developing the capacities and potentialities of the individual so as to prepare that individual to be successful in a specific society or culture. It imparts one with all the power of necessities in making a noticeable mark in any of the field. It is generally seen as the foundation of society which brings economic wealth, social prosperity and political stability. Education is the major aspect of development of any modern society, since if there is a deficit of educated people then society will stop its further progress. Education should not be limited to teaching subjects as one can learn history, math, science and other subjects and be a "book-smart". But education must be equipped with knowledge and skills which are needed to participate effectively as member of society. In our society academic achievement is considered as a key criterion to judge one's total potentialities and capacities. Hence academic achievement occupies a very important place in education as well as in the learning process. An information and technology based society requires individuals, who are able to think critically about complex issues, analyze and adapt to new situations, solve problems of various kinds and communicate their thinking effectively. Thus, there is a need to make systematic educational efforts primarily aimed at influencing attitudes, behavior, values and personality of individuals to manage their growth and development well.

## **ACADEMIC ACHIEVEMENT**

Academic achievement has always been a crucial point and main center of educational research despite varied statement about the aim of education. Academic development of the pupil is the primary concern and the most important goal of education. Not that other aspect of educational objectives are to be ignored but the fact remains that academic achievement is the unique responsibility of all educational institutions established by the society to promote a wholesome scholastic development of pupil (Saini, 2010). In this era it is performance of the student which decides their fate. So it becomes increasingly important to perform better in all aspects of life particularly, in examination to progress in life. Achievement is something gained by some person in his field of endeavor. Now a day, tests on achievement have gained significant importance in measuring one's ability. An achievement test is used to measure nature and extent of students learning in a particular subject. Various factors and conditions affect the achievement of a particular student in a particular field. Sometimes quite deserving students may not achieve as can be expected on the basis of their abilities. Students' interest in the field of endeavor, teachers' methodology of teaching, socio-economic conditions and family set up and some other psychological factors also affect students' performance directly or indirectly. All the human beings are not alike and perform variously on a similar test. There are several factors like interest, attitude, desired knowledge and skill which count toward this difference. The very question as to what factors promote academic achievement in students has exhorted educational researches. In our society academic achievement is considered as a key criterion to judge one's total potentialities and capacities. Hence academic achievement occupies a very important place in education as well as in the learning process. An achievement is all an obtaining for an exertion or an accomplishment of an effort. Achievement is thus an attainment, a proficiency gained or an ability required. 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). It is an exposition of his present level of performance. Academic Achievement is the core of the wider term "Educational Growth" which means 2 Growth in all aspects. It means the amount of knowledge gained by the students in different subjects of study. It encourages the students to work hard. Thus, it helps to know where the student stands. A sense of achievement is a source of joy and good feeling and a failure is a source of anger and frustration. It is the unique, prime and perennial responsibility of a school or any other educational institution established by society to promote a wholesome scholastic growth and development of child. It generally refers to degree of success of that of proficiency attained in some specific area concerning academic work. It indicates what an individual has learnt or acquired in particular field.

## METACOGNITION

Educational psychologists have long promoted the importance of metacognition for regulating and supporting student learning. The concept of metacognition is of recent origin in cognitive theory. It is the process of “thinking about thinking” and knowing “what we know” and “what we don’t know.” It refers to higher order mental processes involved in learning, such as making plans for learning, using appropriate skills and strategies to solve a problem, making estimates of performance and calibrating the extent of learning. It consists of two basic processes occurring simultaneously: monitoring one’s progress as one learns and making changes and adapting one’s strategies if one perceives one is not doing so well (Winn and Synder, 1996). Metacognition is a very complex phenomenon. It is a combination of two words: Meta and Cognition. The prefix ‘Meta’ refers to something that transcends the subject it is related to whereas ‘Cognition’ is the internal structure and process that is involved in the acquisition and use of knowledge including sensation, perception, attention, learning, memory, language, thinking and reasoning. Thus, metacognition refers to a level of thinking that involves active control over the process of thinking that is used in learning situation. The term metacognition refers to the psychological processes that are involved in the way a person controls, modifies, and appraises his own thoughts (Kaur, 2010). The term ‘metacognition’ is most often associated with John Flavell. According to Flavell (1976), metacognition consists of both metacognitive knowledge and metacognitive experiences or regulation. Metacognitive knowledge refers to acquired knowledge about cognitive processes, knowledge that can be used to control cognitive processes. Flavell further divided metacognitive knowledge into three categories: (i) person variables or knowledge about one’s self and other’s thinking (ii) task variables or knowledge that different types of tasks exert different types of cognitive demands and (iii) Strategy variables or knowledge about cognitive and metacognitive strategies for enhancing learning and performance (Flavell, 1979, 1987). Metacognitive experiences involve the use of metacognitive strategies or metacognitive regulation. Metacognitive strategies are sequential processes that one uses to control cognitive activities and to ensure that a cognitive goal has been met. These processes help to regulate and oversee learning and consist of planning and monitoring cognitive activities as well as checking the outcomes of those activities (Kaur, 2010). Soon after Flavell’s introduction, interest in metacognition flourished. Brown (1980) applied metacognitive theory to reading and differentiated between cognitive and metacognitive processes. She identified the metacognitive process as reader controlled strategies that include selecting and studying the most important part of text, selecting retrieval cues and estimating readiness for tests. She also distinguished between knowledge about cognition and regulation of cognition. Knowledge about cognition deals with all the concepts which are related to our thinking processes such as self-concept of knowledge, self-intelligence, self-memory, attention, study habits etc. It can be stable, late developing and remain relatively consistent within individuals. Regulation of Cognitive processes includes all those mechanisms through which we regulate our thinking process such as orientation, planning, monitoring, testing, repairing, evaluating, reflecting etc. It can be relatively

unstable, age independent and changes rapidly from situation to situation. Paris, Wasik and Turner (1991), while recognizing the rate of self-regulation and motivation in metacognition, emphasized self-awareness and self- efficacy. On the other hand, Zimmerman, Bandura and Martinez-Pons (1992) while noting the importance of motivation and self- efficacy to self-regulation posed that self-regulation differentiates between academic success and failure. Thus, metacognition tends to be interpreted as a process in head, rather than as interactive one. Thus, the concept of metacognition can be described as a higher order cognitive structure, i.e. knowledge and processes that control, execute, and evaluate cognition. Metacognition is a superior system that encompasses a person's self-awareness of his/her cognitive functions and facts and that enables a person to purposefully direct these functions and facts. In other words, it's a person's knowledge, about his/her own knowledge; thoughts about his/her own thoughts, or eye on his/her own cognitive Process.

### 1.3.1 Definitions of Metacognition

Flavell (1976) refers metacognition as “the individual’s own awareness and consideration of one’s cognitive processes and strategies.” Paris et al. (1984) describe three aspects of self-control strategies for learning: - Declarative Knowledge: the ability to describe some thinking strategies. Procedural Knowledge: knowledge of how to use the selected strategies. - Conditional Knowledge: Knowledge of when to use it. Metacognition refers loosely to one’s knowledge and control of one’s own cognition system (Brown, 1987). “Metacognitive skills include taking conscious control of learning, planning and selecting strategies, monitoring the progress of learning, correcting errors, analyzing the effectiveness of learning strategies and changing learning behavior and strategies when necessary”(Ridley et al., 1992). 8 Houston (1995), Metacognition is “knowledge or beliefs” about factors affecting one’s Own cognitive activities; also reflection on a monitoring of one’s own cognitive processes Such as memory or comprehension. Wilson (1999) defines metacognition as: - Metacognitive Awareness: It relates to an individual’s awareness of where they are in the learning process, their knowledge about content, personal learning strategies and what has been done and needs to be done. - Metacognitive Evaluation: It refers to judgments made regarding one’s thinking capacities and limitations as these are employed in a particular situation or as selfattributes. Metacognitive Regulation: It occurs when individuals modify their thinking. “Metacognition and reflection both are concerned with the process of monitoring, regulating and controlling an individual’s thinking about their thinking” (Daniels, 2002). Mayer (2003) viewed metacognition “as the knowledge and awareness of one’s own cognitive processes.” Metacognition is “one’s knowledge and beliefs about one’s own cognitive processes and one’s resulting attempts to regulate those cognitive processes to maximize learning and memory” (Ormrod, 2006). Thus metacognition is the ability to evaluate one’s own comprehension and understanding of subject matter and use that evaluation to predict how well one might perform on a task. This is the process where the student takes conscious control of the learning and thinks about how one is thinking in a cognitive sense.

## **NEED OF THE STUDY**

Adolescence is the most important period of human life during which the young individual develops physically, intellectually, mentally, socially and emotionally. It is a period of great excitability and turbulent emotions. The individual is faced with a perennial conflict in all spheres of life. So, it is crucial time to draw out attention towards the youngsters so that they can develop positive and healthy attitude towards life. Educationists are always interested to study different problems of school going 23 population especially of adolescents. One of the most challenging problems of adolescents faced by educationists today is that of accurate prediction of their academic achievement. Parents, guardians, teachers, educationists, institutions and society at large are concerned about how best to enhance academic standards and achievement. Knowledge of factors that influence learners' success has important implications for learning and education. Many educators are interested in knowing beforehand who will perform well and who will perform poorly, in academic progress. It has been realized that there is a need to go beyond the traditional criterion of academic success. Students should be engaged in intellectually and socially satisfying activities so that they can become confident enough to forge ahead in their thinking on the basis of information, facts, clues and concepts. The students who are aversive and think negatively cannot concentrate for a long time and have more difficulty in reaching their potentials than others. Some studies have been conducted on adolescents to study their academic achievement with different variables. Few studies have been conducted on academic achievement and metacognition, academic achievement and self- confidence; and academic achievement and family environment. After reviewing the related literature the investigator concluded that no attempt has been made so far to study the variables metacognition, self-confidence, family environment and academic achievement together. This gap in the area led the investigator to take the combined study of metacognition, in relation to academic achievement.

STATEMENT OF THE PROBLEM "A Study of Academic Achievement of 10+1 Students in Relation to Their Metacognition"

## **OPERATIONAL DEFINITIONS OF THE KEY TERMS USED**

Academic achievement

Academic achievement is the percentage of marks obtained by the students in class X of schools of Board of School Education Utter Pradesh (UPBSE) in different school subjects. 24 10+1 Students The students who have passed class X and are studying in class XI of schools of Utter Pradesh, recognized by Board of School Education Utter Pradesh.

## Metacognition

Metacognition includes two components - knowledge of cognition and regulation of cognition. Knowledge of cognition deals with all the concepts, which are related to our thinking processes such as self-concept of knowledge, self-intelligence, self-memory, attention, study habits etc., and regulation of cognitive processes, includes all those mechanisms through which we regulate our thinking process, such as orientation, planning, monitoring, testing, repairing, evaluating, reflecting etc.

## OBJECTIVES OF THE STUDY

1. To study the relationship between Academic Achievement and Metacognition of 10+1 students.
2. To study and compare the Academic Achievement , Metacognition, of Male and Female 10+1 students.
3. To study and compare the Academic Achievement, Metacognition, of Rural and Urban 10+1 students.
4. To study and compare the Academic Achievement , Metacognition, of 10+1 students studying in Government and Private Schools.

## HYPOTHESIS

- a) There exists no significant relationship between Academic Achievement and Metacognition of 10+1 students.
2. There exists no significant mean difference between Metacognition of Male and Female 10+1 students.
3. There exists no significant mean difference between Metacognition of Rural and Urban 10+1 students.
4. There exists no significant mean difference between Metacognition of 10+1 students of Government and Private Schools.

## Testing Of Hypothesis

**1. There exists no significant relationship between Academic Achievement and Metacognition of 10+1 students.**

There exists significant and positive relationship between metacognition and academic achievement of 10+1 students. It can be inferred from the result that students who have high metacognition perform

academically better than those who have low metacognition. The possible reason for this could be that metacognition helps students to understand what they are supposed to learn and to become aware of whether or not they have actually achieved the goal. Thus, the hypothesis (Hoi) that there exists no significant relationship between Academic Achievement and Metacognition of 10+1 students is REJECTED.

## **2. There exists no significant mean difference between Academic Achievement of Male and Female 10+1 students.**

There is significant mean difference between male and female students on academic achievement. When results are compared in the context of the mean scores, it is found that mean academic achievement scores of the male students is lower than that of female students. It shows that female students have high academic achievement than their male counterparts. It may be due to the fact that female students are more sincere and hardworking in their studies as compared to male students. As males are more impulsive and get involved in other activities, so they spend less time in their studies and score low in academics. Thus, the hypothesis (Ho7) that there exists no significant mean difference between Academic Achievement of Male and Female 10+1 students is REJECTED.

## **3. There exists no significant mean difference between Academic Achievement of Rural and Urban 10+1 students.**

The t- ratios between mean academic achievement scores of rural and urban 10+1 students are not significant. The mean scores of urban students is slightly higher than the mean scores of rural students but the difference is not significant. It shows that rural and urban 10+1 students do not differ in their academic achievement. This may be due to the fact that now- a-days equal opportunities were provided to rural as well as urban students. 154 Thus, the hypothesis (H08) stating that there exists no significant mean difference between Academic Achievement of Rural and Urban 10+1 students is RETAINED

## **4. There exists no significant mean difference between Academic Achievement of 10+1 students of Government and Private Schools**

There is significant difference between the academic achievements mean scores of 10+1 students studying in government and private schools. The academic achievement mean score of students studying in private schools is higher than those studying in government schools. Thus, the hypothesis (Ho9) stating that there exists no significant mean difference between Academic Achievement of 10+1 students of Government and Private Schools is REJECTED. The result shows that the 10+1 students studying in private schools perform academically better than the students studying in government schools. This may be due to the fact that private schools provide more congenial environment and better facilities like updated libraries and well equipped laboratories which make a difference in the

academic performance of their students. Moreover, lesser student-teacher ratio in these schools make teaching more personalized and enhances learning process. The present

## **DELIMITATIONS OF THE STUDY**

Due to paucity of time and resources, the study has been delimited in the following areas:

1. The study is confined to 10+1 students of senior secondary schools recognized by Board of School Education Utter Pradesh only.
2. The study is delimited to a sample of 800 students.
3. The study is delimited to the variables Academic Achievement, Metacognition
4. The study is delimited to the tools: Metacognition inventory by Govil (2003)

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