INTELLIGENCE, CREATIVITY AND SELF-CONCEPT AS PREDICTORS OF ACADEMIC PERFORMANCE AMONGST MIZO CHILDREN (6 to 8 years)

Ms. Alice Lalchhandami Fanai

Thesis submitted for the Degree of

Doctor of Philosophy in Psychology

DEPARTMENT OF PSYCHOLOGY

SCHOOL OF SOCIAL SCIENCES

MIZORAM UNIVERSITY

AIZAWL : 796004

2016

ABSTRACT

INTELLIGENCE, CREATIVITY AND SELF-CONCEPT AS PREDICTORS OF ACADEMIC PERFORMANCE AMONGST MIZO CHILDREN (6 to 8 years)

Ms. Alice Lalchhandami Fanai

Thesis submitted for the Degree of
Doctor of Philosophy in Psychology

DEPARTMENT OF PSYCHOLOGY
SCHOOL OF SOCIAL SCIENCES
MIZORAM UNIVERSITY
AIZAWL : 796004

2016

MIZORAM UNIVERSITY
DEPARTMENT OF PSYCHOLOGY
MIZORAM: AIZAWL
796004

CERTIFICATE

This is to certify that the present work titled, ***"Intelligence, Creativity and Self –concept as Predictors of Academic Performance amongst Mizo Children (6-8 years)"***, is the original research work carried out by Alice Lalchhandami Fanai under my supervision. The work done is being submitted for the award of the degree of Philosophy in Psychology of the Mizoram University.

This is to further certify that the research conducted by Alice Lalchhandami Fanai has not been submitted in support of an application to this or any other University or an Institute of Learning.

(Dr. C. LALFAMKIMA VARTE)
Supervisor

DECLARATION

I, Alice Lalchhandami Fanai, declare that the subject matter of this thesis is the record of work done by me, that the contents of this thesis did not form basis of the award of any previous degree to me or to do the best of my knowledge to anybody else, and that the thesis has not been submitted by me for any research degree in any other University / Institute.

This is being submitted to the Mizoram University for the degree of Doctor of Philosophy in Psychology.

(ALICE LALCHHANDAMI FANAI)

(Dr. C. LALFAMKIMA VARTE)
Supervisor

(Dr. ZOKAITLUANGI)
Head
Department of Psychology
Mizoram University

ACKNOWLEDGEMENT

A subtle, but an ever living dream to do a research work, after lying dormant for more than a decade, the dream has finally become a reality. Thank you Lord.

Prof C. Lalfamkima Varte, my supervisor, without you this piece of work would not have reached its present state. Your patience, wisdom, hard work, methodological and statistical know-how is worth mentioning. Hats off to you Sir, you are a true academician.

Professor Zokaitluangi, Head of the Department, without your persistence, I wouldn't have even started this venture. Thank you for having faith in me.

All the faculty and staff of the Department of Psychology, Mizoram University, thank you for your encouragement, kind words and help. I truly appreciate it.

Ms Malsawmthangi, Director of SCERT and my colleagues of the Teacher Education cell, a simple thank you is not enough to suffice my gratitude to you all for sparing me from my duties in the office. Without your consideration, my work could not have been completed.

The Department of School Education, Government of Mizoram for allowing me to pursue my dream and for granting me study leave to complete my thesis.

The Director of School Education, all Principals and Headmasters of the selected schools, for granting me permission to use their schools and all the beautiful children for dutifully performing the tasks assigned to you.

Ms Roseline and Ms Lalthianghlimi, for helping me collect the data for my research. The laughters and anxieties, the sweets and sweats we shared during the course will remain a thing I will reminisce with fond memories.

My in-laws and my two beautiful sons, thank you for bearing with me and giving me space to do what I do. Special thanks to my husband Mr C.Vanlalvuana, for understanding me and for your encouragement and support. I appreciate it.

Finally, to my Dad - Mr F. Sapbawia (RIP) and my Mother in-law Ms Siamkungi (RIP), I dedicate this work to you. I know you would have been proud of me.

Aizawl: the 7th March, 2016. (ALICE LALCHHANDAMI FANAI)

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

Chapter I

INTRODUCTION

In this advanced technological world, education may be said to be the first step for human development. For it is through education that one acquires knowledge and skills, which increases ones productivity and provides improvement for their quality of life. As rightly stated by Battle and Lewis (2002), education plays a vital role in the development of human capital and is linked with an individual's well-being and opportunities for better living. The social and economic development of the country is also said to be directly linked with students' academic performance as it plays an important role in producing the best quality graduates who will become great leaders and manpower, responsible for the country's economic and social development for the country (Ali et al., 2009).

Thus, the academic performance or academic achievement of students and the identification of the predicting factors have been a topic of interest for many decades (Mahmodi, 1998; Amini, 2004). The predicting factors may be student factors, family factors, school factors and peer factors (Crosnoe, Johnson & Elder, 2004). According to Johnson (2000), these factors also include age, sex, geographical belongingness, ethnicity, marital status, socio-economic status (SES), parents' education level, parental occupation, language, income and religious affiliations which are usually discussed under the umbrella of demography. Besides the demographic profile, the predictive values that intelligence, creativity and self-concept have on academic performance of the students have been an area of interest to scholars. However, studies of the compounding effects of these three independent variables on academic performance are few to be found.

The present study therefore aims to see empirical evidence of the individual and compounding predicting factors leading to academic performance of young children, which includes the intelligence, creativity and academic self-concept of the young children, their demographic variables (age, gender),family structure (number of siblings, birth order, the family size) and socio economic status (parents' educational qualification and family income) and the impact of their parents' social and religious involvement.

Academic performance

Academic achievement or academic performance is a construct, which has been linked with intelligence, creativity and self-concept by many investigators. Academic achievement may be defined as the outcome of education and the extent to which a student, teacher or institution have achieved their educational goals. Goods (1973) has defined

academic achievement as knowledge attained or skill developed in the school subject usually designated by test score or by marks assigned by teachers or by both. According to Egbule (2004), academic performance is defined or regarded as participants' examination grades (Grade point average) at the end of a particular semester or programme. It could also be seen as the level of performance in a particular field of study. Higher scores are generally accepted to indicate better academic performance.

Many researchers have discussed the different factors that affect the students' academic performance. Mushtaq and Khan (2012) proposed that there are two types of factors that affect the students' academic performance, the internal classroom factor and the external classroom factor. These factors are believed to strongly affect the students' performance. According to them, the internal classroom factors includes students' competence in English, class schedules, class size, English text books, class test results, learning facilities, homework, environment of the class, complexity of the course material, teachers role in the class, technology used in the class and the exam systems. External classroom factors include extra-curricular activities, co- curricular activities, works, family and social problems, financial and other problems. Researchers (Hansen, 2000; Harb & El-Shaarawi, 2006), supporting this also stated that students' performance depends on many factors such as learning facilities, gender and age differences and further added student's competence in English as the most important factor. They believed that if the students have strong communication skills and have strong grip on English, it increases their performance.

Academic performance can be measured indifferent ways depending on the desires of the institutes. The most common form of measurement is examination in a form of paper-pencil test in periodic terms or through comprehensive continuous assessment. There is no general agreement on how the academic performance is best tested or which aspects are most important. For research purposes, different researchers have used different methods to measure academic performance of the students. Most researchers employed cumulative grade point average as index of academic performance (Naderi et al., 2009 & 2010a&b); grade-point averages (Taylor, 1958; Nuss, 1961; Cline, Richards & Needham, 1963; Wilson, 1968; Parker, 1979; Kurtz-Costes & Schneider, 1994; Bacon, 2011) and aggregate of the grade points and marks obtained by the students (Mohammadyari, 2013). Some also used standardized test scores (Chapman & Tunmer, 1997). There are also others researchers who suggested that academic performance can be predicted through creativity testing (Cicirelli, 1965; Feldhusen, Treffinger & Elias, 1965; Struthers et al., 1996; Hirsh & Peterson, 2008).

Teachers' rating has often been used to measure academic performance (Skaalvik & Hagtvet, 1990; Frentz et al., 1991; Hay et al., 1997; Guay, Marsh & Boivin, 2003). Some combined teachers rating with grades (Marsh & Yeung, 1997) as indicators of academic performance. Parental expectations is also characterized as a realistic beliefs or judgments that parents have about their children's future achievement as is reflected in course/ grades, highest level of schooling attained, or college attendance (Alexander, Entwisle & Bedinger, 1994; Goldenberg et al.,2001; Glick & White, 2004). Parent's ratings on the children and the expectation they hold on their children has also been shown to have a large impact on the performance of their children in schools (Okagaki & Sternberg, 1993).

In literature, the relationship between intelligence and academic performance has been well established in the literature (Brody, 1997; Sattler, 2001) and scholars have even claimed that intelligence is the strongest predictor of academic performance/achievement (Gottfredson, 2002; Kuncel et al., 2004; Furnham & Monsen, 2009**;** Xin & Zhang, 2009).

Intelligence

It is generally accepted that some people are smarter than the others, perform better academically and are more efficient in making use of the resources in their environment. It is also a known fact that it is not always the intelligent and the learned people who are successful in the course of life and those persons making the most creative contribution for the development of the society are not necessarily the highly intelligent ones. However, there is also no doubt that people vary in their ability to solve problems, their capacity to learn new things, in their acquisition of new knowledge and in their comprehensive ability. Basically, intelligent people are believed to be quick in understanding and mastering new tasks, successful in schools and in other academic activities. By and large, intelligence is notably considered to be the most prized possession and one of the most important constructs in the life of a person and since the very first decade of the twentieth century, it has drawn many scholars' attention to study it in a variety of ways.

Despite the vast interest in the topic, intelligence remains a concept where eminent scholars till today have grappled with the issue of devising a concrete definition fit for all. The concept of 'intelligence' itself has been around for a long time. Some two thousand years ago, Plato and Aristotle singled out cognitive from *orectic* factors in behaviour, and Cicero coined the term *'intelligentia'*, from the Latin verb '*intelligere'* which means 'pick out' or 'discern' which has since assumed such universal acceptance (Eysenck, 1982). As of today, we have been endowed with numerous definitions of intelligence by various scholars. It has been defined as: the power of making good responses from the point of view of truth and fact

(Thorndike, 1911); the ability to do abstract thinking (Terman, 1916); and the faculty of adapting one's self to circumstances (Binet, 1916).

Other scholars added to the vast variety of the definitions of intelligence: intelligence is what the tests of intelligence test (Boring, 1923); the capacity to acquire capacity (Woodrow, 1946); and the aggregate or global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his environment (Wechsler, 1944). The resultant of the process of acquiring, storing in memory, retrieving, combining, comparing and using in new contexts formation and conceptual skills (Humphreys, 1979). It is also referred to as a person's ability to learn and remember information, to recognize concepts and their relation and to apply the information to their own behaviour in an adaptive way (Carlson & Buskist, 1984). Flynn (1987) also defined intelligence as the ability to think abstractly and to readily learn from experience.

More recently, Santrock (2007) maintained the definition of intelligence as the ability to solve problems and to adapt to and learn from experience. Nayak and Mishra (2012) opined that intelligence refers to the activities involved in thinking, reasoning, decision-making, memory, problem solving, and all other forms of higher mental processes. It is the brightness and sharpness of an individual, and his ability to understand things, figure things out quickly, and learn from experience. Feldman (2013) had also stated that to psychologists, intelligence is the capacity to understand the world, think rationally, and use resources effectively when faced with challenges.

Wechsler (1975) had offered four conditions that must be met in defining any behaviour as intelligent. Firstly, he said that the person must be aware of what he or she is doing and why. Secondly, behaviour must have meaning and purpose. Thirdly, intelligent behaviour is rational and can be understood by applying a system of logic. Fourthly, he argued that in order to judge behaviour as intelligent, it must be worthwhile according to the values of a group. His definition of intelligence involves awareness, purpose, rationality and cultural values (Newman & Newman, 1983).

Besides the intellectuals, the concept of intelligence as understood by the laymen is also worth mentioning. Although laymen of different origins have fair understanding of what they see as intelligent, their concept appears to differ from culture to culture (Sternberg, 2004; Sternberg & Grigorenko, 2004). The western countries viewed intelligence as the ability to establish categories and debate rationally, whereas in the eastern cultures and in some African communities, intelligence appeared to be viewed more in terms of understanding and relating to one another (Brislin, Worthley, & MacNab, 2006; Sternberg,

2005 & 2007; Niu & Brass, 2011). In a study among the Taiwanese Chinese, the characteristic of benevolence and of doing what is right is emphasized in their concept of intelligence (Yang & Sternberg, 1997). A longitudinal study conducted in rural Africa revealed that among the Zambian community, the concept of intelligence involved being both clever and responsible (Serpell, 1974, 1982 & 2000). Among the Lou tribe of rural Kenya, it was found that intelligence is viewed as consisting of academic intelligence, social intelligence, practical thinking and comprehension (Grigorenko et al., 2001).

Just as there are variations in the understanding of the concept of intelligence, its basic nature like whether intelligence is a single characteristic or a collection of several distinct abilities had also been a point of debate and discussions amongst the scholars leading to the exigency of different theories. Some theorists studied the organization of mental abilities, focusing on the identification of the factor or factors that constitute intelligence, while some focused on the process involved in the intellectual activity. Spearman (1927), proposed one of the earliest theory popularly known as the 'Two factor theory of intelligence'. He opined that all conceivable measures of intelligence are related to a common general intellectual function and assumed that the correlation between any pair of measures of intelligence could be partitioned into two components- a general or *'g'* component and a specific or *'s'* component and the correlation between any two measures of intelligence will be determined by the ratio of *'g'* to *'s'***.** Which indicated that people who score high on one task will generally score high on another task, and simultaneously, those who do poorly on one task will perform poorly on another task as well (Brody, 1992).

Cattell (1941, 1963, 1971 & 1987) came up with the theory of fluid and crystallized ability. He believed that second order factor analyses provided evidence for more than one second order factor. He suggested that Spearman's *'g'* could be separated into two factors - fluid *Gf* and crystallized *Gc* intelligence. *Gc* refers to the knowledge acquired by past experience, which can be measured with vocabulary tests or tasks requiring general knowledge. *Gf* on the other hand refers to the ability to cope with new situations for which previously acquired knowledge does not play significant role. *Gf* has been commonly regarded as the most reliable and predictive measure for successful performance in both educational and professional settings and is therefore considered a very good predictor of academic achievement (Gottfredson, 2002).

There are other theorists who argued that intelligence has multiple mental abilities that operates more or less independently. Thurstone (1938) suggested that intelligence is a composite of seven distinct primary mental abilities which includes verbal comprehension,

word fluency, perceptual speed, memory, numerical ability, spatial ability and reasoning. Thurstone (1938) even assembled a battery of tests to measure these abilities which he called 'the primary mental ability test'.

Of the multifactor theorist, Guilford (1964, 1967 & 1985) put forth a more complex theory based on three-dimensional taxonomy of intellectual tasks. His theory is based on a three-dimensional taxonomy of intellectual tasks with an assumption that three separate factors like-operations, contents and products make up any individual's intellectual activity. Guildford's cube is a combination of five operations- cognition, memory, divergent production, convergent production and evaluation, four types of contents- figural, symbolic, semantic and behavioural. Figural category was subsequently modified into visual and auditory categories to create five content categories and six products- units, classes, relations, systems, transformations and implications which implies a total of 150 categories of intellectual tasks which can all be theoretically be measured. Guilford (1977, 1981 &1985) again modified his theory replacing his model of 150 unrelated ability factors with a hierarchical ability model (Brody, 1992).

Gardner (1993, 2001 & 2002) pressed forward his argument and posited that both Spearman and Thurstone's theories are too narrow and so he proposed his theory of multiple intelligence which is a set of intelligence consisting of linguistic intelligence, musical intelligence, logical-mathematical intelligence, spatial intelligence, and bodily kinaesthetic intelligence interpersonal intelligence, intrapersonal intelligence and naturalist intelligence. Gardner is of the opinion that everyone possesses all these intelligence but in different degree and these intelligence does not operate in isolation but work together.

Another theory of intelligence the triarchic theory was proposed by Sternberg (1985 & 1997). According to Sternberg, there are three main types of human intelligence. The first one is componential intelligence which includes the ability to acquire, retain and transfer information. Persons with high rating on this are good in critical and analytical thinking. The second type is experiential intelligence which emphasizes insightful and creative thinking. Such types of people are high in problem solving and tackling other tasks that requires insight and creativity. The third type is contextual intelligence or practical intelligence. People having high score on this have the ability to quickly grasp real life problem and have the ability to adapt to their environment successfully (Baron, 1995).

Till date, numerous definitions and theories of intelligence advocated by different scholars and the reason thereof may be attributed to the fact that intelligence cannot be seen, measured or calculated directly like age, height and weight but can only be indirectly

evaluated through studying the performance of an individual through intelligence tests specifically designed for the purpose. Initiative to measure intelligence seemed to have begun in the last part of the 19th century, when Galton (1883) developed a test to measure individual variation in physical strength and sensory competence. A decade later, obliging the request made by the Ministry of Public Instruction in France, Binet and Simon devised the Binet test of intelligence in 1904, to identify those students who are unlikely to benefit from the regular schools so that mentally retarded children can be given special education. Binet and Simon assumed that intelligence should be measured by tasks that requires reasoning and problem solving abilities rather than perceptual motor skills. The test developed by them was therefore basically an individual test, focusing on mental functions such as judgement, reasoning and comprehension items. Verbal skills were considered important by Binet and he believed that a successful intelligence test would have to separately measure several intellectual functions or faculties (Brody, 1992; Benjamin, Hopkins & Nation, 1994).

In the year 1908, Binet and Simon published a new version of test based on empirical research which was also meant to be applicable to normal children as well. He again published a revised scale for his intelligence test in 1911 (Binet, 1911). The Binet-Simon test had so far been revised a number of times in 1937, 1960 and 1972 to incorporate advances in the understanding of intelligence and intelligence testing. Terman, a scholar of the Stanford University translated and revised the Binet-Simon test in 1916 for use in the United States and which was later known as Stanford –Binet Intelligence test (Terman & Childs, 1912; Peterson, 1926). Binet had also developed the concept of mental age (MA) which refers to an individual's level of mental development relative to others and the chronological age (CA) which is the age of the child from birth. If the MA is above the CA, the child is considered bright, whereas if the MA is lower than the CA, the person is considered to be a dull child but it was Stern (1912) who came up with a conclusion that it was indeed possible to calculate an Intelligence Quotient (IQ) by dividing the mental age of a person by dividing their chronological age. Thus the formula IQ= MA/CA x 100 had been used for many years to compute intelligence scores.

A more comprehensive measure of intelligence emerged in 1939 when Wechsler introduced the first of his intelligence test scale for adults WAIS which has been revised in 1955 and 1981. A test for younger children, the Wechsler's Intelligence Scale for Children (WISC) was also developed and revised again a number of times by Wechsler in 1949, 1974, 1991 and recent revision emerged in 2004. He also developed Wechsler preschool and primary scale of intelligence (WPPSI) for smaller children between 4 to 6½ years. WPPSI-III

is the latest version in use at the moment. Wechsler's scale generally includes a number of verbal and non-verbal sub-scales allowing the examiner to quickly identify verbal and non-verbal IQ score. The WISC-IV (2003) yields a full scale score and scores for Verbal Comprehension, Working Memory, Perceptual Reasoning and Processing Speed. The Working Memory Index and the Perceptual Reasoning Index are intended for use in the present study.

Binet-Simon, Stanford-Binet and the Wechsler scales are all individual tests. Several Group test of intelligence which can be ministered to a large number of people at a time have also been developed: Otis-Lennon School Ability Test (Otis & Lennon, 1967), Henmon-Nelson Test (Nelson, Lamke & French, 1973) and Cognitive Ability Test (CAT: Thorndike & Hagen, 1982) are among the popular Group test of Intelligence.

Intelligence and Creativity

Intelligence has been linked together with creativity by different scholars and numerous studies have been carried out to see the extent of their relationship from various angles (Neisser et al., 1996; McGrew & Flanagan, 1997; Allik & Realo, 1997; Al-Saleh et al., 2001 ; Sternberg et al., 2001 & 2004; Williams et al., 2002; Gagné & St Père, 2002; Koke & Vernon, 2003; Sternberg, 2004; Fagan, Holland & Wheeler, 2007; Laidra et al., 2007; Mayes & Calhoun, 2007a&b; Rohde & Thompson, 2007; Deary et al., 2007; Watkins et al., 2007; Naderi et al., 2009 & 2010a; Kirsch, Lubart & Houssemand, 2016). The numerous researches conducted till date considers it impossible to explicitly establish the relationship between them and those conclusions reached are often contradictory (Kaufman & Plucker, 2011).

A significant issue that emerged from these studies was whether intelligence and creativity exists as an identical or a separate entity. It appears that earlier it was assumed by psychologist that creativity is implied in intelligence and it is but a function of high intelligence quotient (Hargreaves, 1927; Spearman, 1927). Several studies had indicated that a substantial amount of intelligence is a pre-condition for any creative activity, a person with high intelligence is not necessarily creative, similarly, a person does not necessarily need to have high intelligence in order to be creative (Oakes & Wells, 2002). Sternberg and O'Hara (2000), also opined that most creative people are quite intelligent, but then, the highly intelligent may not be creative; this view is shared by several researchers (Hollingworth, 1942; Terman & Oden, 1947 & 1959; Torrance, 1962).

Getzels and Jackson, (1962) maintained that creativity and intelligence are two completely different and independent constructs. They reported that only a modest correlation exists between creativity and IQ. Researchers (Guilford, 1950; Wallach & Kogan, 1965) also reported predicted low correlation between the two constructs. Sternberg and O'Hara, (2000) upholds that they are distinct but related constructs. Hayes (1989) stated that creativity and intelligence are not fundamentally related but intelligence may be needed in order to display creativity. Sternberg and O'Hara, (1999), had also concluded from their studies that intelligence and creativity are moderately related at best.

Preckel, Holling and Wiese (2005) put forth what is known as threshold hypothesis wherein they claimed that intelligence and creativity is related up to a certain IQ level but unrelated among individuals with very high IQs. The threshold theory implies that intelligence is necessary but not sufficient for creative achievement. Thus, if an individual is below the threshold, they simply cannot think for themselves well enough to do manifestly creative work. Above the threshold, they have the potential for creativity, but there is no guarantee. They may be creative, but then they may not be so.

Fuchs-Beauchamp, Karnes and Johnson (1993) in a study with a large sample of pre-school students reported moderate positive correlations between the different subscales of creativity and intelligence in children with an IQ less than 120. They also reported a decrease in correlation coefficients in the group of children with an IQ greater than 120. More recently Kim (2005), in a meta-analysis of 21 studies also found the existence of a weak but positive correlation between intelligence and creative abilities. Sligh, Conners and Roskos-Ewoldsen (2005) reported a slight threshold effect for crystallized intelligence while an inverse threshold effect was found for fluid intelligence. Silvia (2008a&b) also demonstrated that the relationship between 10 measures of intelligence and 10 measures of creative abilities to be weak. Furnham and Bachtiar (2008) also reported modest relationship between creativity and intelligence.

Other investigators (Hassan & Butcher, 1966; Ginsberg & Whittemore, 1968) on contrary reported highly significant correlations between creativity and intelligence. Other Researchers (Getzels & Jackson, 1962; Barron, 1963 & 1969) investigating the relationship between intelligence and creativity also posited that the highly creative individuals are also of higher intelligence. Wright (1987), holds that typically the child with a good memory for concepts, rules, categorization, and symbols is regarded as intelligent; but the child who uses this information in unique and original ways is behaving creatively.

Studies investigating the relationship between creativity and intelligence demonstrated that creativity has a nonlinear impact on intelligence which assumes that above-average intelligence represents a necessary condition for high-level creativity. According to researchers (Barron, 1963; Fuchs-Beauchamp, Karnes & Johnson, 1993; Simonton, 1994) creativity can improve cognitive performance among individuals with an IQ lower than 120, but that creativity fails to relate to intelligence for individuals characterized by higher IQ. Sawyer (2012), suggested that the lack of correlation between creativity and IQ higher than 120 could be linked to the small variation of IQ score above 120, and consecutively responsible for the null finding. In a recent study, Jauk and colleagues (2013) also reported that in line with the threshold hypothesis, they found evidence for a segmented linear relationship between intelligence and creative potential. Intelligence significantly predicted creative potential in a lower IQ range but not in the upper IQ range.

Creativity had been alleged to be a subset of intelligence. Guilford (1950, 1967, 1970 & 1975), had theorized that intellect is comprised of 150 different factors, with divergent production being the most relevant to creativity. Divergent production being the generalized gathering of knowledge is used for production of many different ideas in response to problems. In contrast, Sternberg and Lubart (1995) considered intelligence to be a subset of creativity. They posited that creativity is comprised of six different elements: intelligence, knowledge, thinking styles, personality, motivation, and the environment and comprised of three constructs: synthetic which is the ability to create different ideas, analytical , the ability to give a judgment and practical abilities , the ability to apply the intellectual skills gained to daily activities.

Creativity

If intelligence can be recognized as one of the most prized asset of man, creativity may also be equally accepted as a valued personal construct of a person. Cannatella (2004) stressed that the need for creativity is biologically, physically, and psychologically an essential part of human nature, and that it is necessary for human reproduction, growth and cultural striving. Joussemet and Koestner (1999) wrote that “Creativity is a highly valued behaviour that is perceived to be rare.” Milne (1972) believed that “Creativity is a state of mind, and it is most widely expressed by very young children.” There definitely will be a consensus that creativity is useful not only for artistic and innovative inventions, but also for the fact that it can be applied each day in many aspects of our lives. Moreover, it can even help us keep up with the challenges of modern life. As righty pointed out by Runco and Richards (1997), creativity does not just play a role in the arts, invention, and innovation; it also is a part of our everyday lives.

According to Heinzen (1994), creativity drives innovation and evolution, providing original ideas and options, but it is also a reaction to the challenges of life. It sometimes helps when solving problems, but also sometimes allows problems to be avoided. It is both reactive and proactive.

It may not be wrong to describe every child as creative maybe of different degree. Each child has their own originality or inventiveness; in fact, many investigators maintained that all young children have the potential for creativity (Tegano, Moran, & Sawyers, 1991; Mayesky, 1998; Isenberg & Jalongo, 2001). Their inherent curiosity (Feldman, 1989); striving for knowledge (Urban, 1990); search for stimuli and problems inherent curiosity (Getzels, 1982); need for newness (Hunt, 1965); which normally is very strong during early childhood provides a central motive for human development and new forms of behaviour, which then may become a creative process. Inarguably, creativity of different degree is present in a person, undeniably, some are much more creative than others and this difference may be attributed to heredity. However, according to Gomez (2007), a large part may be due to failure of individuals to express their creative potential. Isaksen (1987) also noted that creativity occurs in many people, in differing degrees and manners, and should be viewed as a multifaceted phenomenon rather than as a single unitary construct, capable of precise definition.

But what exactly is creativity? Reid and Petocz (2004) posited that creativity is viewed in different ways in different disciplines: in education it is called ‘innovation’; in business ‘entrepreneurship’; in mathematics it is sometimes equated with ‘problem-solving’, and in music it is ‘performance or composition’. They further added that a creative product in different domains is measured against the norms of that domain, its own rules, approaches and conceptions of creativity.

As with the term intelligence, a distinct and general definition of creativity is yet to be established. Different scholars have come up with their own ways of defining creativity. Barliett (1959) described creativity by using the term ‘adventurous thinking’, ‘getting away from the main tract’, ‘breaking out of the mould’ and ‘being open to experience and permitting one to lead to another’. Mayesky (1998) stated that creativity is a way of thinking or acting or making something that is original for the individual and valued by that person or others. According to Solso (1991), creativity is a cognitive activity that results in a new and novel way of viewing or solving a problem. In line with that Preckel, Holling and Wiese (2005) defined creativity as the ability to produce something that is both novel and appropriate. Santrock (2011) added that, it is the ability to think about something in novel and unusual ways and come up with unique solutions to problems. Storr (1991) reconfirmed the definition of

creativity as the ability to bring to light something new, something which did not exist before. Creativity has also been defined in terms of products, such as products that are statistically unusual and also adjudged to be of high quality (Perkins, 1981).

Torrance (1974) saw creativity broadly as the process of sensing a problem, searching for possible solutions, drawing hypotheses, testing and evaluating, and communicating the results to others. Sternberg and Lubart (1995) refer creativity as the ability to do things that is novel and useful; and more recently restated that creativity refers to the potential to produce novel ideas that are task-appropriate and high quality (Sternberg, 2001). More recently, Sigelman and Rider (2003) defined creativity as the process that includes original ideas, a different point of view, breaking out of the mould, recombining ideas or seeing new relationships among ideas."

Contrary to the believe that creativity embodies only novel ideas, Stewart (1950) upholds that creative thinking may occur even though the idea produced may have been produced by someone else earlier. Thurstone (1952) argued that it does not make any difference whether or not society regards an idea as novel. Stein (1953) insisted that creativity must be defined in terms of the culture in which it appears that the creative product did not exist previously in the same form. Guilford (1959, 1960 & 1986) conceptualized creativity in terms of mental abilities involved in creative achievement clearly involving divergent and convergent thinking.

Torrance (1969, 1974) suggested that, creative behaviour occurs in the process of becoming sensitive to or on being aware of problems, deficiencies, gaps in knowledge, missing elements, disharmonies and so on. He also describes four components by which individual creativity can be assessed, namely (1) fluency (i.e. the ability to produce a large number of ideas), (2) flexibility (i.e. the ability to produce a large variety of ideas) (3) elaboration (i.e. the ability to develop, embellish, or fill out an idea) and (4) originality (i.e. the ability to produce ideas that are unusual, statistically infrequent, not banal or obvious). Other researchers (Guilford, 1957; Jackson & Messick, 1965) are also of the opinion that to be considered creative, one's behaviour should fit four fundamental criteria: originality, relevance, fluency, and flexibility.

Creativity had also been defined in terms of qualitative and discrete trait of the human intellect. It is therefore believed to include divergent and convergent thinking as well as critical and analytical thinking processes, intuition, imagination, elaboration, creative outcomes, novelty and utility as well as certain personal and environmental factors (Barron & Harrington, 1981; Torrance, 1981; Sen & Hagtvet, 1993; Lubart, 1994; Sternberg, 1994 & 1997; Yong,

1994; Therivel, 1998).). It was Guilford (1950), who first proposed the distinction between divergent and convergent thinking. He argued that creativity is a natural resource and can be studied objectively. Divergent thinking moves outward from conventional knowledge into unexplored paths whereas convergent thinking follows the one correct or conventional path. He stated that it is the divergent thinking that leads the individual to numerous and varied responses and arrives at a creative breakthrough.

From the variety of definitions, it may be observed that there are some common but distinct elements and that is that, creativity is seen as development of something which is novel, new and unique, usually a product resulting from a process initiated by a person. It is also seen as a cognitive ability for solving of a problem. Because of its many facets and incomprehensibility, creativity has even been described as a diamond (Gulati, 2003). The nature of creativity has been rightly stated in the words of Haensly and Torrance (1990), who proposed that the fact that we cannot precisely define creativity should not overly disturb us. It should in-fact remind us that by the very nature of this phenomenon, creativity involves more than the semantic world. It encompasses all our senses and is expressed through and for all our modalities. This inability to concretize creativity in fact will keep us humble that nature of creativity can never be studied in absolute assessment and prediction terms."

It may not be wrong to describe every child as creative maybe of different degree. Each child has their own originality or inventiveness; in fact, many investigators maintained that all young children have the potential for creativity (Tegano et al., 1991; Isenberg & Jalongo, 2001). Their inherent curiosity (Feldman, 1989); striving for knowledge (Lehwald, 1986a&b; Urban, 1990); search for stimuli and problems inherent curiosity (Getzels, 1982); need for newness (Hunt, 1965); which normally is very strong during early childhood provides a central motive for human development and new forms of behaviour, which then may become a creative process. Inarguably, creativity of different degree is present in a person; however, according to Gomez (2007), a large part may be due to failure of individuals to express their creative potential. Isaksen (1987) also noted that creativity occurs in many people, in differing degrees and manners, and should be viewed as a multifaceted phenomenon rather than as a single unitary construct, capable of precise definition.

It has been suggested that the creative potential of a child may be attributed to family background, birth order, family size, number of siblings, age gap and family values may all have some role in its development (Albert & Runco, 1989; Gaynor & Runco, 1992; Sulloway, 1996). Besides the family factors, other researchers (Roeper, 1977; Wright & Wright, 1986)

also believed that each child has a creative potential however parental and teacher attitudes and behaviours that devalue creativity is capable of thwarting its development.

It is evident that, in order to develop the creative roots and to nurture creativity, not only do parents and the family have to provide a stimulating and enriched environment (Hogan, 1988), but society as a whole should be a *creativogenic* one (Stein, 1988). However, one of the most eminent scholars in creativity (Torrance, 1981) is of the opinion that every child is creative by its nature unless they have experienced abandonment, cruelty, rejection, lack of love or an early loss. In contrast, Therivel (1998) argued that a well-balanced amount of misfortunes and assistances as well as a given genetic endowment may lead in high levels of creative activity.

Therefore, creativity being a complex entity poses complex problem in its measurement. According to Guilford (1950), the difficulties in measuring creativity are mainly related to establishing the practical criterion, frequent fluctuations in creative performance, types of items and their contents and complexity and subjectivity involved in the scoring problems. The problem is more pronounced in young children as Getzels and Jackson (1962) had pointed out; these difficulties remains in areas of securing the creative subjects, obtaining the co-operations of younger children and in evaluating younger children's response.

Cropley (2000) posited that creativity tests measure specific cognitive processes such as thinking divergently, making associations, constructing and combining broad categories, or working on many ideas simultaneously. It also measures non-cognitive aspects of creativity such as motivation (e.g. desire of novelty, risk-taking), and facilitatory personal properties like flexibility, tolerance for independence, or positive attitudes to differentness.

Researchers (Rickards, 1994; Brophy, 1998) are also of the opinion that actual creative production does not depend on divergent thinking alone, but also requires convergent thinking. Convergent thinking refers to tests that measured rational, problem-solving abilities which is analytical, logical and controlled whereas divergent thinking on the other hand refers to the ability to come up with many solutions or ideas for problems that don't have one solution and it is an associative and intuitive thought, and thinking that requires flexibility. The complexness of the construct therefore accounts to the complexity in measurement as well.

Despite the various complications involved in the measurement of creativity, scholars had thrown in efforts to measure it by employing different types of method of investigation. McCarty (1924) used graphic procedure, Abramson (1927) measured through inkblot response and observations, Andrews (1930) adopted different methods of observation, and Guildford

(1967) constructed a battery of tests based on the distinction between convergent and divergent thinking (Mogan, King, Weisz & Schopler, 1994).

In line with Guildford (1967), Torrance (1963) developed his 'Creative thinking tests'. Torrance's Tests of Creative Thinking (TTCT) has been the most widespread creativity tests and has dominated the field when it comes to the testing of individuals for many decades now. It consists of alternate forms of two batteries: a verbal section 'Thinking Creatively with Words' and a nonverbal or figural section 'Thinking Creatively with Pictures'. The standard scoring system provides measures of fluency, flexibility, originality and elaboration. The TTCT (Torrance 1966/1974), have been examined by many researchers who have firmly establish the cross-cultural application and validity (Cramond et al., 1999; Wechsler, 2006). Torrance (1981) also developed another test, '*Thinking Creatively in Action and Movement*' (TCAM) as a part of the main TTCT for young children which has also been widely used for measuring the creativity of very young children.

Academic self-concept

Self-concept is another construct which has been under study in various dimensions by scholars. Marsh (2007) holds that a positive academic self-concept is beneficial, particularly for motivating individuals to improve their academic performance. It is a significant construct since it has been found to be both a cause and an effect of academic achievement. It therefore has stimulated extensive research. As with the other constructs there is a lack of clear distinction among these self-related perceptions. However, there appears to be a general consensus among the scholars that self-concept is multidimensional (Bong & Skaalvik, 2003; Marsh, Byrne & Shavelson, 1988; Shavelson, Hubner & Stanton, 1976) and that self-concept is not innate, but rather it is formed through an individual's experiences and interaction with the environment (Bong & Clark, 1999; Bong & Skaalvik, 2003; Marsh & Shavelson, 1985).

In its most generic terms, self-concept refers to one's self-beliefs and self-evaluations. It has been defined as the: 'person's perceptions of themselves' (Marsh & Shavelson, 1985); 'person's self-evaluation regarding specific academic domains or abilities' (Trautwein et al., 2006); 'mental representations of one's abilities in relation to one's academic progress' (Bracken, 2009; Brunner et al., 2010); 'mental representation of personal qualities that regulate behaviours' (Marsh, 1990a); and 'our perceptions of ourselves' (Shavelson & Bolus, 1982).

According to Burns (1979), self-concept is a psychological entity which includes our feelings, evaluations, and attitudes, as well as descriptive categories of ourselves. It is manifested outwardly by our behavioural and personality traits and inwardly by how we feel

about ourselves and the world around us (Maccoby, 1980). Sanchez and Roda (2003) defined self-concept as a component of human personality development. It is developed through the process of self-reflection and is susceptible to change.

Shavelson and colleagues (1976) maintained that self-concept can be described as an organized, multifaceted, hierarchical and developmental construct, in which general self-concept is at the top of the hierarchy and academic self-concept is a subcomponent of general self-concept. Lewis and Knight (2000) also emphasized that self-concept is composed of the academic, social, emotional, and physical dimensions. Academic self-concept is also explained as "specific attitudes, feelings, and perceptions about one's intellectual or academic skills, representing a person's self-beliefs and self-feelings regarding the academic setting" (Lent et al., 1997).

It may therefore be maintained that academic self-concept generally refers to individuals' self-concept or mental representations of one's abilities toward academic domains (Shavelson and Bolus,1982; Byrne,1984); individuals' knowledge and perceptions about themselves in achievement situations (Wigfield and Karpathian, 1991); a student's self-perception of their ability developed through specific endeavours and academic interactions (Valentine et al.,, 2004), student's view of his or her academic ability when compared with other students (Cokley, 2000); and an evaluative self-perception that is formed through the student's experience and interpretation of the school environment (Shavelson, Hubner & Stanton, 1976; Marsh & Craven, 1997). According to researchers (Covington, 1984; Bong & Clark, 1999), the conceptual definitions of academic self-concept include both cognitive (i.e., awareness and understanding of the self and its attributes); and affective components (i.e., feelings of self-worth) formed through the normative evaluation of perceived competence.

The measurement of academic self-concept has been done in a variety of ways by different researchers to suit the purpose of their study: 'Academic self-esteem subscale' (Battle, 1981); 'School subjects self-concept scale' (Marsh, Relich & Smith, 1983); 'General and academic status scale' (Piers & Harris, 1964); 'Academic self- concept scale' (Quek, 1988; Reynolds, 1988; Liu & Wang, 2005; Fakhroo et al., 2008). Academic self-concept in specific subject areas such as mathematics, english, and science are also measured as it involves a description and an evaluation of one's perceived academic abilities (Byrne, 1996; Hattie, 1992; Marsh, Byrne & Shavelson, 1988).

The Academic Self-Concept Scale (Reynolds, 1988) is one of the major quantitative instruments employed to measure academic self-concept. The validity and reliability issues regarding the ASCS have therefore been thoroughly examined in previous psychometric and

social psychological research studies (Griffore & Samuels, 1978; Reynolds, 1988; Marsh, 1993; Cokley et al., 2003; Cokley & Patel, 2007; Dedonno & Fagan, 2013). In most of the scales, self-reports is the most commonly used method to measure the academic self-concept. Students are usually expected to indicate how much they agree with each of the statements on a response scales (Bandura & Schunk, 1981).

Family structure (Family size, number of siblings and birth order)

The family plays a crucially important role in the dissemination of formal and informal education of the children which had led many researchers to spend their resources in trying to figure out the impact that the family structures have on the academic performance of the children. Family size is considered a significant factor in child development by scholars as it is believed to contribute significantly to the formation of a child's personality as well as in their intellectual development.

Children from large families have a greater opportunity to learn and interact with other siblings; they learn cooperation and adjustment at an early age than children of smaller families as they must learn to get along with siblings. They also take on more responsibility, both for themselves and often for younger brothers and sisters. In addition, children in large families must cope with the emotional crises of sibling rivalry, from which they may learn important lessons that will aid them later in life. This factor, however, may also be a disadvantage; the privileged position of being the older child may have been diluted by the younger siblings or the younger child may have to be under the eldest child's shadow and may suffer feelings of inferiority.

On the other hand, children in small families can receive a greater amount of individual attention and tend to be comfortable around adults at an early age. This can also have a disadvantage that they may be overprotected by parents, which can result in dependence, lack of initiative, fear of taking risk. The increased parental attention may also take the form of excessive scrutiny and pressure to live up to other people's expectations. Only children are often loners and have the lowest need for affiliation. They tend to have high IQs and are successful academically. However, only children have also been found to have more psychological problems than children from larger families (Belmont & Marolla, 1973; Steelman & Mercy, 1983; Steelman, 1985; Parcel & Menaghan, 1994).

Many researchers have also established that across various measures of intellectual skills and educational achievement, individuals with the fewest siblings do the best (Nisbet & Entwistle, 1967; Eysenck & Cookson, 1970; Marjoribanks, 1974; Cicirelli, 1978; Mercy &

Steelman, 1982; Alwin, 1991; Knodel & Wongsith, 1991; Downey, 1995; Kuo & Hauser, 1997; Pong, 1997; Anh, Knodel, Lam, & Friedman, 1998; Post & Pong, 1998). Examining how family structure influences the development of cognitive abilities Zajonc and colleagues (Zajonc & Markus, 1975; Zajonc, 1986) also reported that children with several siblings scored lower on tests of intellectual abilities than children with one sibling. They argued that the more children in the family, the less mature and stimulating the intellectual environment. In this view, each new child in a family experiences an increasingly diluted intellectual environment.

Similarly, birth order research has been most active in intelligence studies from early times (Galton, 1874, Thurstone & Jenkins, 1929; Outhit, 1933; Anastasi, 1956). Most findings point to a negative association between sibling position and cognitive outcomes. First born children are, on average, smarter than their younger siblings (Lindert, 1977; Price, 2008). But then last-born children can also benefit from being the only children for a longer time (Lindert, 1977). Number of researches on birth order reported that the eldest children in the family tends to develop slightly higher IQs than their younger siblings since they enjoyed the privilege of being the only child for a longer time and benefit from less competition, and that parents spend more quality time with their first born children than their later born siblings which add benefits especially during the sensitive early years (Lynn, 1959). Studies had also suggested that first born children may be higher in creativity among males while a reverse is found in females with later born children scoring higher in creativity (Eisenman & Cherry, 1970; Eisenman & Schussel, 1970).

Two popular models have been proposed in the study of birth order: the confluence model (Zajonc & Markus, 1975) and the resource dilution model (Lindert, 1978; Powell & Steelman, 1989; Blake, 1981 & 1989; Downey, 1995). The confluence model (Zajonc & Markus, 1975) posited that family environment influence children's intellectual development and when there are more adults and older children in the family, the richer is the environment. First-borns can enjoy a rich intellectual environment when they are the only children, but this milieu is depressed by the arrival of siblings. At the same ages, later-born children also benefit from a richer intellectual environment, due to the presence of more mature older siblings. Consequently, this would lead to younger children having higher age specific intellectual maturity. According to Smith, (1993) older siblings can tutor their younger ones and this is expected to benefit the tutor more than the tutee. The resource dilution model (Blake, 1981 & 1989; Downey, 1995) posited that parental resources are finite, and as the number of children in the family increases, the proportion of parental resources accrued by any one child decreases

and that variations in parental resources or investments have an important influence on children's intellectual development and educational success.

Socio-economic status (Parents' education, parents' occupation and family income)

Parents' level of education, parents occupation and family income placed under the umbrella of socio economic status (SES) have been regarded as predictors of children's academic performance by many researchers (Duncan, Featherman & Duncan, 1972). According to Ersado (2005), educational level of parents is influential on children and it determines their access to schooling. Higher parental or household head normally the fathers' level of education is also associated with increased access to education (Ersado, 2005). It has also been observed that non-educated parents cannot provide the support needed by their children and often do not appreciate the benefits of schooling (Juneja, 2001; Pryor & Ampiah, 2003).

The link between educational background of the parents, the occupation and the family income and children educational process had been highlighted by number of studies. All the studies agreed that children's enrolment, retention and completion can seriously be affected by the low socio-economic status and low educational level of the parents which resulted to poverty (UNICEF, 2008; Kainuwa & Yusuf, 2013).

The level of parent's education influences their knowledge, beliefs, values and goals about childrearing, which influence and build the parental behaviours which indirectly relate to their children's school performance. Besides, high levels of education enhance parents' facility to become more involved in their children's education, and also enable parents to acquire and model social skills and problem-solving strategies conducive to children's school success. Thus, students whose parents have higher socio-economic status and higher levels of education may have an enhanced regard for learning, more positive ability beliefs, a stronger work orientation, and they may use more effective learning strategies than children of parents with lower socio-economic status and lower levels of education (Joan & Smrekar, 2009).

Children from an educated home normally like to follow the steps of their parents which motivate them to work actively in their studies. Simultaneously, parents with more than a minimum level of education are expected to have a favoured attitude to the child's education provide encouragement and help in their school work. They are also likely to have wider vocabulary by which the children can benefit and develop language fluency (Musgrave, 2000).

The importance of the home environment and family process has been claimed by Campbell and Wu (1994). According to them, the family's level of encouragement,

expectations, and education activities in the home are related to educational attainment of the children. Song and Hattie (2004) agreed that families from different socio-economic groups create different learning environments that affect the child's academic achievement. The attitude of the parents is also an important to help condition their children's attitudes. A parent who shows complete regard for education will have some effect upon his or her children's education progress. The fact that there is a consistent finding of motivation being related to achievement behaviours is affirmed by Schunk, Pintrich and Meece (2008).

Family income has been used widely as the predominant measure of socio- economic status in a majority of research studies. Researchers (Halle, Kurtz- Costes & Mahoney, 1997; Snibbe & Markus, 2005; Aronson, 2008) have linked low family income with lower academic achievement and slower rates of academic progress as compared with high-income families. For low-income families priority needs to be given to housing, food and other daily necessities that it becomes difficult to spare expenses for school necessities. According to researchers (Hess et al., 1982; Bradley et al., 2001a) low-family income parents are less likely to purchase reading and learning materials for their children, less likely to take their children to educational and cultural events, and less likely to regulate the amount of TV their children watch. As a result, low-SES children more frequently experience school failure (even in the early grades), which moves them on a trajectory of either conduct problems or withdrawal behaviours (Battin-Pearson et al., 2000).

The most common primary and contributory reason for many children to be out of school is poverty (Kainuwa & Yusuf, 2013). The reason for non-enrollment or children dropping out of school was found to be poverty in Tanzania (Dachi & Garrett, 2003) and in rural China (Wang, 2010), whereas, children from better family income are more likely to remain in school. This has been suggested by both statistical data and empirical researches. Glewe and Kreme (2006) reported that children from the poor and credit constrained family are three times more likely than other children to drop out of primary school.

Colclough and colleagues (2000) maintained that poor households tend to have lower demand for schooling than richer households: whatever the benefits of schooling, the costs, for them, are more difficult to meet than is the case for richer households. The pressure on children from poorer background in particular, to withdraw from school increases as they get older, particularly as the opportunity cost of their time increases.

REVIEW OF LITERATURE

Inevitably, psychologists and educators have recognized the significance of intelligence, creativity and self-concept as independent constructs, their relationship with each other and the influence they have on the academic performance of an individual in a school. Numerous studies have therefore been conducted on these constructs by various researchers around the globe. The next few pages contain review of the findings of previous researches from the limited sources which will add substance to the present research.

Academic performance

Students are the future of the nations and they are undeniably the most essential asset for any educational institutions. The social and economic development of a country is deemed to be directly linked with their academic performance. Ali and colleagues (2009), had stated that the students' performance (academic achievement) plays an important role in producing the best quality graduates who will become great leaders, great entrepreneurs and manpower for the country thus responsible for the country's economic and social development. Therefore, the academic performance or academic achievement of the students need to be the main focus of any educational institution for it measures the achievement of the institution itself. Numerous studies had identified certain factors that affects student's academic performance which are- the students' attendance in the class, the learning materials and socio-economic factors like family income, mother's and father's education, teacher-student ratio, presence of trained teacher in school, sex of the student, and distance of schools (Raychaudhuri et al., 2010).

Academic achievement is commonly measured by examination or continuous assessment but there is no general agreement on how it is best tested or which aspects are considered most important. Different researchers have used different methods to measure academic performance of students. Naderi and colleagues (2010a&b) employed Cumulative Grade point Average as index of academic performance and The Iowa Test of Basic Skills (ITBS) and grade-point averages (GPAs) were employed by Bacon (2011). Mohammadyari (2013) took the aggregate of the grade points and marks obtained by the students**.** Other Researchers also employed the Grade Point Average as a measure of academic performance in literature (Taylor, 1958; Nuss, 1961; Cline, Richards & Needham, 1963; Wilson, 1968; Parker, 1979; Kurtz-Costes & Schneider, 1994). Some other used standardized test scores (Chapman & Tunmer, 1997). Some combined teachers rating with grades (Marsh & Yeung, 1997) as indicators of achievement. A self-reported achievement in six subject areas was used by Ai (1999) to assess the students' achievement. There are still others who suggested that

academic performance can be predicted through creativity testing (Cicirelli, 1965; Feldhusen, Denny & Condon, 1965; Struthers et al., 1996; Hirsh & Peterson, 2008). Some other researchers used test results or previous year result since they are studying performance for the specific subject or year (Hake, 1998; Hijazi & RazaNaqvi, 2006).

In addition, numerous researchers have utilised teachers' rating to measure academic performance (Skaalvik & Hagtvet, 1990; Frentz et al., 1991; Hay et al., 1997; Guay et al., 2003) and reported teachers' perceptions to be a good predictor of academic performance (Good, 1981; Pianta, 1997; Alvidrez & Weinstein, 1999; Hamre & Pianta, 2001; Friedel, Marachi & Midgley, 2002). However, the view was not shared totally by other researchers, therefore the extent to which these perceptions affect or impact achievement has been a topic of debate (Dusek & Joseph, 1983; Jussim, 1991). Some researchers uphold that teachers make decisions about student's abilities on a continuous basis and these decisions can impact the quality of instruction communicated to students by the teachers (Payne, 1994; Jussim & Eccles, 1995; Sbarra & Pianta, 2001).

Teachers' judgments of student's ability have also been shown to be consistent with performance on standardized tests (Hoge & Coladarci, 1989) including IQ (Svanum & Bringle, 1982) and achievement tests (Doherty & Connolly, 1985; Egan & Archer, 1985). These findings have been found as early as students in preschool (Stoner & Purcell, 1985) and have been demonstrated across elementary school subject areas (Hopkins, George, & Williams, 1985). The efficacies of early teacher's ratings in predicting achievement in elementary school have been reported by researchers (Good & Brophy, 1987; Weinstein, 1989; Wentzel, 1993).

Other studies have also reported interesting findings on teachers' rating. Perry, Guidubaldi and Kehle (1979) found that kindergarten teachers' rating of children's social skills predicted their third grade spelling and math achievement. Alexander, Entwisle and Dauber (1993) examined teachers' ratings of classroom behaviour and found that first grade teacher' ratings on interest, participation and attention span restlessness scales were correlated with student's achievement test scores at the end of the first year and with student's grades for the next three years.

Alvidrez and Weinstein (1999) studied the relationship between early teacher's perceptions of pre-school performance and future high school performance using 110 preschool students as samples and reported that teachers' rating of intelligence scores was a good predictor of grade point average (GPA) and SAT scores. The result also indicated that students from high socio-economic (SES) status groups were more positively rated by their

teachers and judged to be more independent than students from low SES, who were judged by teachers to be immature.

However, ratings and expectations from teachers cannot be fool proof. Rosenthal and Jacobson (cited in Good and Brophy, 1987), manipulated teacher's expectations for students achievement and reported a behaviour change in the teacher. They randomly selected students and were reported to the teacher to be identified as intellectual late bloomers. The teacher's behaviour was reported to have changed enough to have a significant effect on student's performance, both in the classroom and on achievement tests.

Parents' ratings on their children and the realistic beliefs that parents have about their children's future achievement have also been shown to have a large impact on the performance of their children in schools (Steinberg et al., 1992; Eccles, 1993; Alexander et al., 1994; Wang & Wildman, 1995; Singh et al, 1995; Frome & Eccles, 1998; Goldenberg et al., 2001; Glick & White, 2004). Parental expectations are normally based on an assessment of the child's academic capabilities as well as the available resources for supporting a given level of achievement. Alexander and colleagues (1994) suggested that the parents' abilities to form accurate beliefs and expectations regarding their children's performance are essential in structuring the home and educational environment so that they can excel in post schooling endeavours.

Researchers (Davis-Kean, 2005; Pearce, 2006; Vartanian et al., 2007) reported that parental expectations and ratings have been found to play a critical role in children's academic success. Students whose parents hold high expectations receive higher grades, achieve higher scores on standardized tests, and persist longer in school as compared to those parents who hold relatively low expectations from their children. High parental expectations are also linked to student motivation to achieve in school, scholastic and social resilience, and aspirations to attend college (Hossler & Stage, 1992; Peng & Wright, 1994; Reynolds, 1998).

The impact that parents attitudes and behaviours have on their children had also been stressed by researchers. Christenson and colleagues (1997) stated that the variables related to parental attitudes and behaviour are more important in improving academic results than social class or the family make-up. They added that it is these variables, through which parents transmit positive educational experiences to their children, which differentiate between students with high and low academic achievement. Supporting this, Deslandes, Potvin and Leclerc (1999) also concluded that parental variables (parental style and parental involvement dimensions) are stronger predictors of school achievement than family characteristics.

Hunt and Paraskevopoulos (1980) established that parental beliefs directly influence parental interactions with their children, and these in turn seem to influence the development of the child. They recognized the importance of interactions among family members and pointed out the occurrence of a developmental benefit when a match occurs between a child's abilities and the mother's predictions about these abilities. They also posited that mothers who accurately estimate their children abilities tend to develop an environment that is optimally challenging for the child. They further stated that the more accurate the mother was in predicting her child's abilities, the higher the child's developmental level.

Intelligence and academic performance

Review of literature revealed that several scholars had looked into the relationship and the predictability of intelligence and academic achievement (Allik & Realo, 1997; McGrew & Flanagan, 1997; Al-Saleh et al., 2001; Sternberg et al., 2001; Williams et al., 2002; Koke & Vernon, 2003; Fagan et al., 2007; Mayes & Calhoun, 2007a&b; Rohde & Thompson, 2007; Watkins, Lei & Canivez, 2007; Naderi et al., 2009). However, there appears to be a considerable debate regarding the causal precedence of intelligence and academic performance (Watkins, Lei & Canivez, 2007). While intelligence and achievement are considered as identical constructs by some scholars, some believed that the relationship is reciprocal. There are also other scholars who assert that intelligence is causally related to achievement (Laidra, Pullmann & Allik, 2007).

Previous researches that explored into the academic performance, referred intelligence to the measurement of 'cognitive ability' which is operationalized as an 'IQ' or 'Intellectual Quotient' score. IQ scores have therefore been regarded universally as one of the best indicators of an individual's potential task performance and future learning capabilities (Duckworth & Seligman, 2005; Di Fabio & Busoni, 2007). There are empirical evidences that determined that students with higher intelligence tests' scores have better academic achievement than students with lower intelligence tests' scores.

Agarwal (2002) studied some correlates of academic achievement and a significant positive relationship was found between academic achievement and intelligence. According to Neisser and colleagues (1996), the average correlation between IQ scores and grades is approximately .50 varying considerably depending on the measures used.

Lynn and Mikk (2007) carried out an extensive study on intelligence and academic performance in math and science among 10 year-olds in 25 countries and 14 year-olds in 46 countries. They reported that there was a significant relationship between the two constructs.

Some scholars even posited that intelligence is the best predictor of academic performance. Laidra, Pullmann and Allik (2007) in their cross-sectional study from elementary to secondary school in Estonia using a large sample of 3,618 students (1,746 boys and 1,872 girls) concluded that intelligence, as measured by the Raven's Standard Progressive Matrices, was found to be the best predictor of students' grade point average (GPA) in all grades.

Deary and colleagues (2007) also maintained the existence of a strong correlation between intelligence and academic achievement. In their 5-year prospective longitudinal study with more than 70,000 children, they examined the psychometric intelligence of children at the age of 11 years old and their education achievement in 25 academic subjects at the age of 16. They reported that general intelligence contributed to success in all 25 academic subjects.

More recently, Anees (2013) studied academic achievement in relation to intelligence among class VII students from S. T. high school and AMU Girls high school, administered the culture faire intelligent test. The study revealed a positive correlation between intelligence and academic achievement, with the correlation coefficient being .70 which is significant at 0.01 levels. However, no significant difference between boys and girls was found on the measure of academic achievement.

Ebru and Firdevs (2010) also studied the relationship between multiple intelligences and academic achievements of second grade students in Izmir, Turkey. The academic achievement scores were found to be effective on students' multiple intelligences in the study. Students, who attained lower academic achievement level, were found to have lower verbal-linguistic ability, lower logical-mathematical ability and even lower interpersonal and intrapersonal ability then the other students who have high academic achievement level. A statistically significant difference on multiple intelligence subscale means of the participants according to their academic achievement levels was also reported.

In a recent study, Chandra and Azimmudin (2013) studied the influence of intelligence and gender on academic achievement of secondary school students of Lucknow city and they reported a significant difference between high IQ and low IQ category students on academic achievement. They maintained that academic performance needs intelligence and further reported that students who are able to understand their studies well happens to grasp it well and they are also found to perform better in their examinations as compared to low IQ students. The same findings that intelligence positively affects the academic achievement of the students have been previously reported by several scholars (Mehrotra, 1986; Mishra, 1986).

In another study to explore whether or not intelligence tests' scores predict individual differences in scholastic achievement irrespective of SES factors among 641 Brazillian children, Colom and Mendoza (2007) reported that the results of their study indicated that children's intelligence tests' scores predict their scholastic differences while SES factors failed to do so. These results also highlighted that personal intelligence is a genuine predictor of individual differences in scholastic achievement.

Inconsistency in the relation due to age factor has also been observed. Jensen (1980) proposed that the correlation between intelligence and academic achievement appears to decline with age, the correlation is highest in primary school and lower in middle school and college. Pind, Gunnarsdottir and Johannesson (2003) had posited that the decrease in this correlation is generally explained by the restriction of range that occurs as a result of fewer students being enrolled in the upper echelons of the educational system.

Some scholars also argued that while some claimed intelligence as the best predictor of academic performance, there are relatively large systematic variation from one study to another in the correlation between intelligence and academic performance due to various reasons (Jensen, 1980; Gustafsson & Undheim, 1996; Neisser et al., 1996). In an examination of 404 adults who completed four scales of a timed, group administered, intelligence test, 10 personality scales, and a creativity measures, the findings suggested that achievement had small to moderate positive correlations with an intelligence factor (Aitken Harris, 2004).

On the various studies on the relationship between intelligence and academic performance, most of the findings that emerged from the review of literature reported positive relation and no study that reported negative relations was uncovered within the review done by the researcher.

Creativity and academic performance

Review of literature also shown that the relationship between creativity and academic performance have been examined by a number of investigators (Ahrens, 1962; Lucht, 1963; Cicirelli, 1965; Bentley, 1966; Jacobson, 1966; Feldhusen et al., 1970; Smith, 1971; Murphy, 1973; Shin & Jacobs, 1973; Marjoribanks, 1976; Asha, 1980; Mahmodi, 1998; Karimi, 2000). Interestingly, the fact that no definite conclusion could be drawn concerning the relation between creativity and academic performance has drawn the attention of many researchers.

In the early research, Getzels and Jackson (1962) had proposed that there existed a positive relationship between creativity and academic ability**.** They had made their conclusion based on the research conducted on an early study on the role of creativity in school

achievement, where they demonstrated that a group of students whose creative ability was in the top 20% and intelligence in the lower 80% of their school performed as well on standardized achievement tests as a group whose intelligence was in the top 20% and creativity in the lower 80%, despite a 23-point difference in IQ, They further reported that the high creatives, although having an average I.Q. with 5 points less than their school population taken as a whole performed better in school achievement.

Torrance (1962), replicated the model of Getzels and Jackson (1962) and his findings supported that creativity is related to academic performance as posited by the researchers. Based on the threshold theory proposed by Anderson (1960), Torrance (1962) hypothesised that beyond a certain level of intelligence, academic performance is related increasingly to creativity but ceases to be related strongly to intelligence.

Yamamoto (1964c) also carried out a study replicating Torrance (1962), with a sample of 272 grades 9 through 12 students of the University of Minnesota High School. In his study, Yamamoto divided the students into three groups. The high intelligence group (comprising students in the upper 20% on IQ but not in the upper 20% on creativity scores), the high creative group (comprising students in the upper 20% on creativity scores but not in the upper 20% on IQ) and the high intelligent-high creative group which comprised students in the upper 20% on both the I.Q. and creativity measures. After the academic achievement scores of these groups was analyzed, he reported to have found no difference in academic achievement between the high creatives and the high I.Q. groups although there was a mean difference of twenty I.Q. points. He posited that the creatives seemed to be able to "compensate" for what they lacked in intelligence by their creative ability to attain similar level of academic performance.

Shin and Jacobs (1973) suggested that IQ is related to only the more basic types of achievement, whereas creativity is related to higher level achievement that involved divergent verbal behaviours (e.g., creative writing). Researchers (Bentley, 1966; Smith, 1971) also maintained that creativity correlated significantly with divergent thinking and evaluative abilities, and no correlation existed between creativity and cognitive and memory scores and that creativity appeared as a necessary dimension in performance on the divergent criteria.

In another study, with 313 males and females as participants at the University of Manitoba, Struthers and colleagues (1996) upholds that there is a relationship between creativity and student's performance. Similarly, in a study among 106 students in Tehran, Mahmodi (1998) also established a significant relationship between creativity and academic performance. Powers and Kaufman (2004) also showed that the graduate record examination

(GRE) test scores for post-graduate selection in USA were significantly correlated with creativity. Naderi et al., (2009) reported significant prediction of cumulative grade point average by creativity, as well as by age and gender in their study among a sample of one hundred and fifty three Iranian undergraduate students in Malaysian Universities.

Hansenne and Legrand (2012) in their study on 'Creativity, emotional intelligence and school performance in children' reported that while creativity predicts school performance in French and math among children between 8 and 12 years old, intelligence is not found to be a predictor of performance.

Another interesting finding that emerged from the investigation on the strength of the relationship between creativity and school grades is that the strength of the creative abilities differs in terms of the subjects being analysed (Cicirelli, 1965; Marjoribanks, 1976; Freund et al., 2007). Early researches revealed verbal creative abilities to correlate more strongly with school grades than figural creative abilities (Cicirelli, 1965); in students' achievements in social studies (geography, history, political science). Freund and colleagues (2007) came up with similar conclusions. They found creative abilities to be most strongly related to students' achievements in social studies (geography, history and political science) and less so in learning foreign languages (German and English) or to mathematics and natural sciences (mathematics, biology, chemistry and physics).

Niaz and colleagues (2000) also reported contrasting research findings whereby no statistically significant relations could be found between students' global results in figural Torrance Test of Creative Thinking (TTCT) and their grades in mathematics, physics, and biology; as well as in the English language. However, they discovered correlations between students' creative abilities and grades in earth sciences geography, Spanish language, as well as chemistry.

Ai (1999) studied the relation between creativity and academic achievement with a large sample of 2,264 students from 68 schools using three creativity batteries, the Torrance Test of Creative Thinking (TTCT), the Abedi-Schumacher Creativity Test (CT), and the Villa and Auzmendi Creativity Test (VAT). The academic achievement of the students' was assessed using a self-reported achievement in six subject areas: Spanish, Basque, English, natural science, mathematics and social science. He reported that a canonical correlation analysis found that when operationalized by their grades, creativity was related to academic achievement for both boys and girls. For girls, *elaboration* related to four of the academic subject areas (Basque, Spanish, social science and English) and *fluency* related to natural science and mathematics. For boys, *flexibility* was the predominant factor that was found to

be related to all six academic subject areas. When operationalized by the other three measures (TTCT, VAT and CT), on the other hand, creativity was scarcely related to academic achievement.

Other early researchers (Taylor, 1958; Nuss, 1961; Parker, 1979; Cline, Richards & Needham, 1963; Wilson, 1968) had also reported the existence of positive relation between creativity and academic performance. Some other researchers who also strongly supported that creativity was related to academic achievement include collection of researchers (Ahrens, 1962; Lucht, 1963; Jacobson, 1966; Feldhusen et al., 1970; Murphy, 1973). Some investigators claimed that creativity could even lead to better performance in general (Torrance, 1963; Yamamoto, 1964a; Cicirelli, 1965; Feldhusen et al., 1965). Some deduced creativity to be actually correlated with advanced levels of academic achievement (Ai, 1999).

In spite of the numerous studies that uphold that there is a significant relationship between creativity and academic achievement, all studies do not agree with each other. Edwards and Tyler (1965) also replicated Getzels and Jackson's (1962) study in a sample of 181 ninth-grade students. Contrary to the other findings they concluded that creativity was not related to school achievement. Other researchers (Mayhon, 1966; Tranpraphat, 1976) also agreed that creativity was not related to academic achievement. Marjoribanks (1976) also showed that creativity ceased to be related to achievement after a threshold level of intelligence is reached.

Later on, Behroozi (1997) also studied the relationship between personal features and creativity and also between creativity and academic achievement among 187 university students using Cattell questionnaire of creativity. The result also showed no significant relationship between creativity and academic achievement. In another study employing the Abedi questionnaire to measure creativity and CGPA for academic performance, Nori (2002) investigated the sex difference according to the type of relationship between creativity and academic achievement among 306 high school students in Shiraz city. The result revealed no significant relationship between creativity and academic performance.

There are yet some other researchers that reported low correlations between school performance and creativity test scores (Haddon & Lytton, 1968). Krause (1972 & 1977) showed that correlations between creativity scores and grades were as low as .09 in physics and .15 in art. Sierwald (1989) also showed that the correlation between creativity test scores and school grades was actually negative in the case of physics (-.12) and it did not go beyond .26 even for art. Karimi (2000) replicated the studies of Krause (1972 & 1977) on secondary

school students in the Shiraz school in Iran and showed that the relationship between creativity and academic achievement emerged to be as low as 25%.

Academic self-concept and academic performance

Numerous studies have also established that academic self-concept has a relationship with academic performance (Wylie, 1979; Cokley, 2000; Awad, 2007; Tan & Yates, 2007). An extensive study has also been conducted by Marsh and his colleagues (Marsh et al., 1988; Marsh & Yeung, 1998; Marsh et al., 2001; Marsh, 2004). Many research studies found positive correlation between academic achievement and various self-concept measures. Most educators and researchers conceded that the relationship is at least partially reciprocal. However, determining the direction of the relation has proved to be a critical issue.

The self-enhancement model suggested that academic achievement is due to the consequence of academic self-concept, and enhancing academic self-concept improved the academic performance. Contrary to that, the skill-development model highlighted that it is the academic achievement that influences academic self-concept and the best way to enhance academic self-concept is to improve achievement skills (Calsyn & Kenny, 1977; Marsh et al., 1999 & 2002; Marsh, 2006).

Another group of researchers claimed that both academic self-concept and academic achievement directly influence each other, that is, they are reciprocal (Marsh & Craven, 1997; Marsh, Byrne & Yeung, 1999; Guay et al., 2003). The relationship has therefore been considered as an egg-chicken question (Marsh et al., 2002) and the conclusion of the debate as to whether prior academic self-concept influences academic achievement or prior academic achievement causes subsequent academic self-concept still remains awaited.

In a review of research, Purkey (1970) concluded that a significant relationship existed between self-concept and school environment. He noted that the unsuccessful student as opposed to his/her successful peers was characterised by low self-concept. According to Pullmann and Allik (2008), high self-concept facilitates academic achievement.

Bacon (2011) studied the ‘Academic self-concept and academic achievement of African American students transitioning from urban to rural schools’ using 101 African American middle school and junior high students who had been enrolled in Iowa schools for less than 24 months or more than 24 months. The results showed a significant relationship between academic self-concept and academic achievement measures of ITBS composite scores and cumulative GPA.

RaisSaadi and colleague (2012) conducted a study among Iranian students in the primary school and reported that there is a relationship between academic performance and academic self-concept of students. They posited that students with high academic self-concept would show more academic achievement as well. Likewise, different researchers studied the relation between academic self-concept and academic performance and found significant correlation between the two variables but of differing values. Similarly, West, Fish and Stevens (1980) reported correlation coefficients ranging from .27 to .70.

In a meta-analysis of 128 studies, Hansford and Hattie (1982) found the overall correlation between general self-concept and achievement to range from -.77 to .96, with a mean correlation coefficient of .21. Stas and De Wever (1985) in a study of Flemish secondary school children also found correlations ranging between **.**04 and .32. Further, Skaalvik & Hagtvet (1990) studied two cohorts of Norwegian primary school pupils longitudinally, and reported correlations of academic self-concept and achievement from .48 to .65. Correlations ranging between .18 and .33 were also reported in a Swedish study of pupils by Johnsson-Smaragdi & Jonsson (1995).

In a study conducted among 14 to 17 year old adolescents, a correlation of .45 between school achievement and academic self-concept was reported (Orr & Dinur, 1995). Hoge, Smit and Crist (1995) in their longitudinal study of junior high school (grades 6 and 7) adolescents reported a correlation of around .40 between academic self-concept and achievement. Calsyn and Kenny (1977) found a causal predominance of achievement over self-concept of ability in a longitudinal study involving 556 junior high and high school students wherein the data was collected five times, each collection was done a year apart.

Rosenberg, Schooler and Schoenbach (1989) supported the significant positive relationships and maintained that academic achievement have a stronger impact on self-concept than self-concept has on academic achievement. Another study conducted among elementary school students also came up with similar findings (Muijs, 1997). Skaalvik and Hagtvet (1990) reported achievement to be predominant over academic self-concept amongst 3rd and 4th year primary school pupils, while by the 6th year the relationship had become reciprocal.

Contrary to the above findings, Shavelson and Bolus (1982) found evidence of the causal predominance of self-concept over achievement when they measured the self-concept and grades of seventh and eighth grade students two times and six months apart. In support to that, Wiltfang and Scarbecz (1990) discovered that school marks was the main predictor of self-concept in a study of 4077 adolescents. In contrast, Valentine, DuBois and Cooper (2004)

in a meta-analysis found very small effects of self-concept upon academic achievement. However, Westaway & Skuy (1984) concurred that self-perceived academic ability is the most important predictor of educational and vocational aspirations following their study of white South-African adolescent girls.

Interestingly, Newman (1984) found that self-concept had no causal influence on academic achievement, but when Marsh (1987) analysed the same data, he arrived at the opposite conclusion. Watkins and Astilla (1987) found a mixed direction of causation in their cross-legged correlation study of 13 to 14 year old Filipinos. They found that self-concept is dominant over achievement among the boys, and achievement is dominant to self-concept among girls.

A number of scholars are of the opinion that the interrelations between academic self-concept and academic achievement are reciprocal and mutually reinforcing rather than one-way and causal (Shavelson & Bolus, 1982; Hansford & Hattie, 1982; Marsh, 1990b, Skaalvik & Hagtvet, 1990; Kurtz-Costes & Schneider, 1994; Marsh & Yeung, 1997; Marsh et al., 2005; Marsh & O'Mara, 2008; Kornilova, Kornilov & Chumakova, 2009).

Helmke and van Aken (1995) also supported the reciprocal-effects model. They evaluated the relation between achievement in mathematics and mathematics self-concept using a three-wave design (from Grade 2 to 4) where achievement in mathematics was inferred using test scores and school marks. Result of the study revealed only one of the four effects of prior self-concept on subsequent achievement to be statistically significant. Hence, Helmke and van Aken (1995) concluded that "During elementary school self-concept is mainly a consequence of cumulative achievement-related success and failure and that it does not have a significant impact on later achievement, neither on marks nor on test performance."

Muijs (1997) conducted a study among Grade 4 students using a two-wave design. The study revealed a stronger path from academic achievement to academic self-concept than the path from academic self-concept to academic achievement, although both paths were significant. Even though academic achievement was found to have a stronger influence on subsequent academic self-concept, the results point to a reciprocal relationship. In a multicohort-multioccasion study based on samples from Grades 2 to 4, Guay, Marsh and Boivin (2003) also found a reciprocal-effects model over different age cohorts.

In contrast to the foregoing, there are yet another group of researchers who failed to establish a relation between academic self-concept and academic performance**.** Maruyama,

Rubin and Kingsbury (1981) studied students at ages 9, 12 and 15, and found no evidence that academic achievement and self-concept were causally related to each other. Byrne (1986) in a study amongst ninth through twelfth grade students using two data collections six months apart could not establish the causal predominance between self-concept and academic grades in either direction.

Pottebaum, Keith and Ehly (1986) analysed longitudinal data from high school students, with a time interval of two years, and found no significant difference in cross-lagged correlations of achievement to self-concept or self-concept to achievement. Similarly, using the Tennessee Self-concept Scale (TSCS) in a study designed to uncover psychological differences between academically weak or gifted students, West and colleagues (1980) also pointed out that a relationship between self-concept and achievement does not always emerge.

Studies also reflected a relationship between achievement and specific self-concepts. Shavelson and Bolus (1982) found self-concept of english and mathematics ability to be more highly related to achievement than global academic self-concept, while other (non-academic) self-concept facets were only slightly related to students' grade point average.

Chapman and Tunmer (1997) assessed reading achievement and reading self-concept in elementary students using three waves of data collection (from Grade 1 to 3). Results showed that between Grade 1 and Grade 2, only stability paths were significant (i.e., reading achievement from Grade 1 to Grade 2 and reading self-concept from Grade 1 to Grade 2). All other paths were non-significant, suggesting that neither achievement nor self-concept directly affected each other.

Similar results have also been reported in a number of studies using the Self-Description Questionnaire (SDQ) and Self-Description Questionnaire II (SDQ II) with children and adolescents, in which achievement in English and mathematics was consistently found to be most highly correlated with English and mathematics self-concept, respectively. However, achievement in English and mathematics emerged to be less highly correlated with the other academic self-concept facets, and not (or very slightly) correlated with non-academic self-concept facets (Marsh, Parker & Smith, 1983; Marsh, Relich & Smith, 1983; Marsh, Parker & Barnes, 1985; Marsh & Parker, 1984; Marsh, 1990a).

Scholars have also studied the relation between academic self-concept and academic performance in the developmental perspectives addressing the correlational and causal aspects of the relation between these constructs (Marsh, 1989; Skaalvik & Hagtvet, 1990;

Wigfield & Karpathian, 1991; Wigfield & Eccles, 1992; Eccles, Wigfield, Harold & Blumenfeld, 1993; Wigfield et al., 1997; Chapman & Tunmer, 1997; Marsh & Craven, 1997; Harter, 1999). More recently, De Fraine and colleagues (2007) maintained that the causal direction of academic self-concept and performance vary with age. They opined that the academic self-concept of younger students is more likely to be influenced by their school performance but as they enter higher grades, academic self-concept and performance are more likely to influence each other.

Empirical research suggested that the general self-concept of children become increasingly differentiated and tends to decline from early to mid-adolescence as this can be a difficult phase of self-questioning and adjustment (Liu & Wang, 2005). Marsh (1989) also suggested that self-concept reaches its lowest point in middle adolescence but increases through early adulthood. It is however interesting to note that academic self-concept of young children are very positive but may also be highly biased; which however, is normal and that it is not consistent.

An extensive researcher on academic self-concept (Marsh, 1989 & 1990a; Wigfield & Karpathian, 1991) reported that the self-concepts of very young children are very positive and not highly correlated with external indicators (e.g., skills, accomplishments, achievement, self-concepts inferred by significant others) but that with increasing life experience, children learn their relative strengths and weaknesses so that specific self-concept domains become more differentiated and more highly correlated with external indicators.

Marsh, Craven and Debus (1998) reiterated that the reliability, stability, and factor structure of academic self-concept scales improved as children (between 5 to 8 years of age) grew older, indicating that academic self-concepts become more firmly established and stable with age. In addition, consistent with the proposal that a child's self-perceptions become more realistic with age, self-ratings were more correlated with teacher ratings as children grow older.

Sex difference on Intelligence

Intelligence, creativity and academic self-concept being an interesting and relevant constructs have been studied in multidimensional areas. Sex difference is one area that has caught the interest of many scholars and therefore has been investigated by many. Sex differences in IQ itself have been examined by different scholars who have come up with contradictory findings. Douglas and Rushton (2006) posited that during a period of almost one hundred years there has been a general agreement that there is no sex difference in overall

general intelligence. They maintained that there were no significant mean differences in cognitive test scores between males and females but there was a highly significant difference in their standard deviations; boys were more at the low and high extremes of cognitive ability.

Different researches reported to have found no sex difference in the general intelligence. Baker and Jones (1993) analyze sex differences in the eighth grade math performance of over 77,000 students in 19 developed and developing countries. They found no evidence of sex difference. Reilly and Mulhern (1995) estimated the intelligence of 125 (45 males and 80 females) of students at Queen's University using the WAIS. They also found no gender significant difference in their measured intelligence. Similarly, researchers also claimed that there were no significant sex differences (Halpern & LaMay, 2000); more specifically in the estimates of school valued intelligence as a total score composite of logical mathematical and linguistic intelligences (Barnard & Olivarez, 2007). Naderi, Abdullah and Tengku-Aizan, (2008) also claimed that there are no sex difference in overall general intelligence; however, the means of males are higher than females.

Contrary to the foregoing, several studies have reported sex differences in intelligence (Hattori & Lynn, 1997; Allik, Must & Lynn, 1999). Researchers (Furnham et al., 1999; Deary et al., 2003) argued that there are sex differences in specific cognitive abilities. Supportively, empirical studies have clearly shown that males perform better on gross motor skills, spatial orientation, Visio-spatial tasks, mechanical aptitude, logical-mathematics and matrix reasoning; while females' perform better on verbal facility, perception of details, perceptual speed, memory and digit of symbol substitution (Anastasi, 1982; Hyde, 2005; Monastersky, 2005).

Rammstedt and Rammsayer (2000) uphold that male self-estimates were significantly higher for logical-mathematical and spatial intelligences, while female estimates were significantly higher for musical and interpersonal intelligences. Adrian and Buchanan (2005) in their study of sex differences in intelligence in 20 countries, from China through to Germany and Scotland exposed that males gave significantly higher estimates than females for general over intelligence and this difference emerge to be consistent across countries and populations although there are wide differences in the level.

Sophie and colleagues (2006) investigated whether sex differences observed on the subtests of the intelligence test were attributable to sex difference in general intelligence and reported that that males outperformed females on 3 out of the 10 subtests (information, arithmetic and matrix reasoning); while females' performance was better than males only on 1 subtest, which is digit of symbol substitution. Wendy and Thomas (2007) investigated 436

(188 males, 248 females) participants between 18 to 79 years of age across countries like Australia, Great Britain and North America. They reported a very small sex difference in general mental ability, however, males clearly performed better on visio-spatial tasks while females performed better on tests of verbal usage and perceptual speed.

Contrasting to the dominance of males over females in terms of intelligence, Deary and colleagues (2007) found that there were sex differences in educational attainment, and that girls performed better than boys on overall academic subjects. They reported significant sex differences in all academic subject scores, girls performed better in every topic except in Physics. Monastersky (2005) posited that in general it appears that boys are born with an interest in figuring out how system works, while girls naturally focus more on understanding the mental state of others. In contrast, there are some researchers that say little about this innate gender differences and holds that children spent years in the sea of cultural and academic stimuli that can influence their performance.

Despite the universal propagation for gender equality, various studies conducted have revealed that gender discrimination has already embedded its roots in the minds of parents as well as teachers. According to Lippa (1994), "It appears to be both explicitly and implicitly assumed that men were more intelligent than women, and the historical legacy of this may be observed in various national educational policies and organizational hiring decisions." Similarly, Furnham and Gasson (1998) observed that both parents believed their sons to be significantly more intelligent than their daughters, and that parents think their (first born) sons are brighter than their daughters (Furnham, 2000; Furnham, Reeves & Budhani, 2001).

Review of literature also revealed that men have higher self-estimations of overall intelligence and appeared to overestimate their intelligence, while the women were quite accurate in estimating their intelligence (Hogan, 1978; Reilly & Mulhern, 1995). Supplementary, studies also showed that male overall self-estimations are typically significantly higher than female self-estimations (Beloff, 1992; Byrd & Stacey, 1993; Reilly & Mulhern, 1995; Furnham & Rawles, 1995; Bennett, 1996). In an investigation of the relationship among sex, attitude toward intelligence and self-estimation of multiple intelligences for self and parents among adolescents in secondary schools, Neto and colleagues (2008) reported that males rated themselves higher on overall, mathematical, spatial, intrapersonal, spiritual and naturalistic IQ compared with females; and that verbal, logical and intrapersonal intelligence were significant predictors for self and parents overall IQ estimations.

Sex difference on Creativity

The issue of sex differences in creativity have also been inconsistent. Several scholars supported that there are difference in boys and girls (Abra, 1991; Eisenman, 1992; Kim & Michael, 1995; Baer, 1998). A comprehensive review of Baer and his colleague (Baer, 1999; Baer & Kaufman, 2008) evinced that no consistent pattern has emerged in sex differences in creativity test scores; while some evidences favoured boys (Zheng & Xiao, 1983; Tegano & Moran, 1989), other favoured girls (Kim & Michael, 1995). In contrast, Amabile (1983) found no significant sex differences in a series of studies of creativity in art using a collage making task.

There are also studies that reported no sex differences (Kaufman, Baer & Gentile, 2004; MehrAfza, 2004). In a study among Grade 5 to 8 students, no sex differences in creativity scores were found (Runco, 1986; Runco & Albert, 1986; Runco & Bahleda, 1986). In another study among 100 high and 100 low scoring males and females chosen from 1,450 grade 5 and grade 6 students, non-significant sex differences was reported (Dudek & Verreault, 1989). Similarly, no sex differences were reported among fourth graders to ninth graders in Hong Kong (Cheung et al., 2004).

It is interesting to note that, many scholars have established that girls are more creative than boys in verbal, figural fluency and problem solving while boys are found to be superior to girls in figural originality and flexibility and their mathematical and spatial abilities (Torrance & Aliotti, 1969; Ogletree, 1971; DeMoss, Milich & DeMers, 1993; Kershner & Ledger, 1995). Cheung and Lau (2010) have given more credit to the girls positing that girls excel boys in verbal flexibility, figural fluency, figural flexibility, figural uniqueness and figural unusualness.

Khaleefa and colleagues (1996) in their investigation among Sudanese children also reported that as long as they enjoy the same level of freedom, small girls were more creative than boys. Stephens, Karnes and Whorton (2001) in their study among American Indian third and fourth grade also reported that girls obtained higher scores than boys across all subtests with significant differences in originality and creative index scores. These findings correspond with the findings of other researchers (Coone, 1969; Warren & Luria, 1972; Kogan, 1974; Flaherty, 1992; Boling & Boling, 1993; Dudek, Stobel & Runco, 1993).

There are studies that proposed that males surpass females on some components of creativity, but females generally appeared to be better than males on other component (Ai, 1999; Palaniappan, 2000; Naderi et al., 2009). Asha (1980) found that there existed a highly

significant relation between creativity and achievement for boys. Nori (2002) also found significant difference in academic achievement of boys and girls. Academic achievement was more in girls than in boys. This trend appears to be present from an early age, since the tendency for girls to score higher than boys in younger students prior to grade three except on originality was reported (Kogan, 1974; Tegano & Moran, 1989). Even in early adolescence, girls scored higher on figural creativity (Coone, 1969; Warren & Luria, 1972).

Sex difference on Academic Self-concept

Studies on the effects of gender on the academic self-concept have also brought out that males and females differs in their beliefs about their academic competencies (Marsh, 1989; Zareh, 1994; Ireson & Hallam, 2001; Wigfield et al., 2001; SarAbadani-Tafreshi, 2006). It has also been suggested that males are more confident in their own capacities and evaluation of their own academic abilities than female (Colwill, 1982; SarAbadani-Tafreshi, 2006). Study among university students had also shown statistically significant differences in the academic effort and academic achievement (Matovu, 2012).

According to Marsh (1989) and Hattie (1992) sex differences in specific domains are very consistent. Males show higher academic self-concept in general self-esteem and in subjects that are perceived as 'masculine' such as mathematics, science and in the physical domain which is supported by different scholars (Marsh et al., 1983; Marsh, Barnes, Cairns & Tidman, 1984; Skaalvik & Rankin, 1994; Wigfield & Eccles, 1994; Agwagah & Harbor-peters, 1994; Funk & Bachman, 1996). Whereas, female are reported to have higher verbal and school self-concepts on non-science courses like language (Marsh, Relich & Smith, 1983; Joffe & Foxman, 1988; Marsh, 1989; Marsh & Yeung, 1998; Harter, 1999; Wilgenbusch & Merrell, 1999). Female students are reported to have significantly lower self-concept than males with respect to Mathematics related and other traditionally male dominated subjects including computer (Busch, 1995). Researchers (West et al., 1980; Johnsson-Smaragdi & Jonsson, 1995, Kling et al., 1999) concluded that since males had higher academic self-concept than females their academic performance emerge to be better.

The Organisation for Economic Co-operation and Development (OECD: 2001) analyzed sex differences in mathematics and science achievement in the eighth grade for fourteen OECD countries including Turkey and reported that sex differences in mathematics achievement are statistically non-significant in all countries but the Czech Republic. In science, sex differences favour males and are often statistically significant except for five countries including Turkey.

Scholars are of the opinion that sex differences in academic self-perceptions start as early as elementary school and remain stable through adolescence to adulthood (Jacob et al., 2002). In a study among elementary school children, few sex differences in mathematics self-concept was reported, but in the junior high and high school students, consistent difference in favour of male was found (Meece et al., 1982). It has also been proposed that this pattern of sex differences remains before, during, and after the transition from year 6 to junior high school (Wigfleld, Eccles, Maclver, Rueman & Midgley, 1991).

On the other side, various scholars posited no significant difference between male and female in levels of independence (Gabriel & Gardner, 1999). Hossaini (2002) conclusively maintained that sex does not influence self-concept and self-concept does not influence academic achievement in any way.

Variation due to school

There is considerable interest in the differences in academic outcomes of children who attend either government or private and public schools, and the factors underlying these differences. In Mizoram the schools may be categorized into three parts: Schools run and maintained by the government, schools that are aided by the schools but owned by community and the purely private schools. The schools are compartmentalized in three stages; the elementary stage comprised of classes I to VIII, the secondary stage comprised of classes IX and X, the higher secondary stage comprised of classes XI and XII.

Since the Indian government following other developed countries give due importance to the education of children, it has reflected it in 'Article 21 A' of the Directive Principles of State Policy (Eighty-sixth Amendment) Act, 2002 of the constitution of India, wherein it provided that 'the state shall provide free and compulsory education to all children of the age of 6 to 14 years as a fundamental right in such manner as the state may, by law determine. Therefore, all the government schools are run free of any tuition fees, the government provides for the salary of the teacher and give grants for administrative and maintenance purposes. In addition, after the enactment of the Right of Children to Free and Compulsory Education Act, (2010), the children have been provided free textbooks and free uniforms. Besides, the teachers are to have professional qualification; those untrained also must undergo mandatory professional teacher training.

On the other hand, in Mizoram as in other parts of the country, private schools are mostly English medium schools that mushroom everywhere. Children need to pay tuition fees and other fees as prescribed by the school owners which are for the teachers' salary and for

maintenance of the schools. Teachers in private schools are usually directly selected by the owner of the school, and their services can be terminated anytime if it pleases the owner of the school. Basically, in a state like Mizoram, most of the teachers in the private schools do not have professional degrees, even though the National Council of Teacher Education had issued a notification that all teachers must be trained by the year 2015.

There is a general agreement that the type of school a student attends is likely to be related to the level of intelligence of the student which contributes to the academic performance of the student. Some researchers (Crosnoe, Johnson & Elder, 2004) even have the opinion that school ownership and funding have an effect on performance of the student. School owned by private individuals and those owned by the government happens to be an important structural component of the school. Even in the place where the present study is being conducted, the two types of management schools -purely private owned schools and those owned and managed by the government are found to have significant difference in terms of infrastructure, enrollment and academic performance.

Private schooling have been considered attractive in other countries as well for various reasons such as an exclusive social climate, provision of extended hours, better amenities, individual tutoring and counselling, or religious education (Bertola & Checchi, 2013). However empirical studies have disclosed that the opinion on government and private schools is country-specific. Private education is associated with better future performance in terms of college attendance and labour market prospects in the United States (Evans & Schwab, 1995; Rouse, 1998) and in the United Kingdom (Green et al., 2011), but private schooling is associated with poorer outcomes in Italy (Bertola and Checchi 2004, Bertola, Checchi & Oppedisano, 2007) and Ireland (Pfeffermann and Landsman 2011), while in Chile government and private schools are differently effective for students from different family backgrounds (Contreras, Sepulveda & Bustos, 2010). In a cross-country analysis of the 2000 PISA survey, Vandenberghe and Robin (2004) also confirmed that private education is associated with higher competencies in some countries, but with lower competencies in others.

Bertola and Checchi (2013) in their discussion paper on 'Who Chooses Which Private Education? Theory and International Evidence' reported the contrast between positive selection into private schooling in the US and negative selection in Italy. They found that private schools attract more talented students in countries like Canada, the United States, and the United Kingdom, where private schools deliver better test performances. In countries such

as Italy and Indonesia, conversely, private schools are less attractive for good students than government schools.

School based variation on Academic Performance

In spite of the infrastructural and academic input made by the government, private schools still have more number of children, and most parents opt to send their children to private schools. The reason may be attributed to the fact that the society as a whole acclaimed the English language and also the academic outcomes of private school students exceed those of government school students. Supportively, Coulson (2009) also reported that in more than 150 statistical comparisons covering eight different educational outcomes, the private sector outperformed the public sector in the overwhelming majority of cases.

Coleman, Hoffer & Kilgore (1982) reported that, even after taking into account key background characteristics of students (mainly their socioeconomic status), on an average, students attending private high schools, outperformed students attending public high schools. Review of literature had also revealed that that learning outcomes in private schools, as measured by test scores, are on average better than government schools (Kingdon, 1996a; Tooley & Dixon, 2006; Andrabi et al., 2007).

Kingdon (1996b) has shown that private schools in Lucknow, India-most of them neither recognized by, nor registered with, the state-produce significantly higher student achievement than local "free" government schools. Kingdon separately (but contemporaneously) showed that the private sector in Lucknow enrolled 80% of all students (Kingdon, 1996a). Tooley and colleagues (Tooley & Dixon, 2006; Tooley et al., 2011) have found that private school enrolls the majority of students in a variety of African and Indian villages, and that private schools significantly outperforming government schools in those areas.

In contrast, Lubienski and Lubienski (2006) however claimed that students attending public schools actually outperformed students at private schools. In their study, they used hierarchical linear modelling, a technique that takes into account the multilevel nature of the data, to compare the achievement of public and private school 4th graders in mathematics. It found that when student background, mainly SES, was taken into account, students attending public schools actually outperformed students at private schools.

Braun, Jenkins and Grigg (2006) looked at 4th grade mathematics and reading, 8th grade mathematics and reading, and confirmed a negative effect for private schools in 4th

grade math. They found no difference between public and private schools for 4th grade reading and 8th grade math, but found a private school advantage for 8th grade reading.

Sampson (2004) argued that private schools have alternate sources of funding, higher level of discipline, and are very selective and this is why they tend to have higher academic achievement than students from public schools. Private schools are also found to be more likely to have a greater number of students from high socio-economic status families and are likely to select students with stronger abilities and have greater financial resources (Crosnoe, Johnson & Elder, 2004).

School based variation on intelligence

The question on whether there exists an effect of schooling on intelligence has been met with contradicting results. Ceci (1991) had argued that since the pattern of relations between schooling variables and achievement test scores are similar to the pattern of relations between schooling variables and intelligence scores, it can be claimed that there are effects of schooling on intelligence. This suggests that IQ scores are just as influenced by schooling as is academic achievement.

Another group of researchers, (Anitha, Vannessa & Sreelakshmi, 2013) conducted a study on the multiple intelligence levels of secondary students of government and private schools in Secunderabad using 240 students (120 boys and 120 girls) of 9^{th} standard .The results revealed that there is a significant difference between multiple intelligence levels of government school students and private school students and girls were found to have more multiple intelligence levels than the boys. They further reported that Government school students excel in three areas i.e., logical, interpersonal and intrapersonal than the private school students and that boys are good at spiritual/naturalistic intelligence.

Contrary to that, Herrnstein and Murray (1994) arrived at quite a different conclusion. They posited that that there is little evidence that differences in the amount of schooling accounts for much of the intellectual variation. In a very recent study, Dutta, Chetiya and Soni (2015) investigated the intelligence of secondary school students in Lakhimpur district of Assam using a sample of 500 Students (250 boys and 250 girls) selected randomly from 16 Government and Private secondary schools. They reported to have found no significant difference in intelligence between the government and private school students; and no significant difference in the intelligence of school boys and girls; and there is no significant difference between in the intelligence of rural and urban secondary school students of Lakhimpur District of Assam.

School based variation on creativity

The existence of variation in the creative nature of the students based on the type of schools (government or private) has been reported by Al-Oweidi (2013) who claimed that there were differences on the means of school type. His study revealed that there exist differences on the creative characteristics (mystery, fantasy, curiosity, adventure and sense of humour) for the favour of private schools and there were differences in means on the following characteristics (fluency, problem sensitivity and independency) for the favour of public schools. He proposed that to develop adventure trait such as fantasy, adventure and curiosity among students, it is usually necessary for schools to organize trips and provides sports facilities that requires a lot of money. Usually, this is more possible for private schools than public schools.

Eshun and colleagues (2013) studied the Schools Pupils' Perceptions of Factors Impacting on their Creativity Development in Ghana and reported that the private primary schools are contributing significantly to educational development in Ghana. They found that private primary schools children reported significant difference in their perception of creativity development over public primary school pupils.

According to Bello (2009), privately owned primary schools having adequate financial resource, are better equipped in terms of infrastructure, academic facilities, instructional materials, better teacher-student relation and above all congenial school environment that support creativity development. Besides that the role of parents in school management and the frequent interactions between educators and parents on pupils' performance is another contributing factor. Whereas these factors are not considered essential in public schools which depends solely on state sponsorship and parents from very low socio-economic strata.

Family Structure: Birth Order, Number of Siblings and Family Size

The study of the demographic and other factors affecting students' academic performance rooted back to the seventeenth century (Azhar et al., 2013). Early attention to the relation between birth order and intelligence has been made by prominent psychologists (Galton, 1874; Thurstone & Jenkins, 1929; Outhit, 1933; Koch, 1957; Anastasi, 1956). From then on, review of literature had revealed several studies that looked into the influence of family socio-demographic characteristics on the academic achievement of students (White, 1982; Astone & McLanahan, 1991).

The inverse relationship between the number of siblings also referred as *sibship* size and educational outcomes alone had been an area of interest for many researchers. Studies have been conducted to look at the association between number of sibling and IQ using large sample amongst Scottish children and French school children (Heuyer et al., 1950; Gille et al., 1954) and in the United States (Douglas, 1964; Burton, 1968; Bachman, 1970; Eysenck & Cookson, 1970; Breland, 1974; Sewell et al., 1980). Two generalizations were found to emerge from these various studies. Firstly, the association of sibling number with IQ usually appears to depend upon social class. The lower the social class of the father, the more pronounced the association between sibling number and IQ. Secondly, if birth order is held constant, the larger the number of siblings, almost invariably the lower is the IQ. In some of the studies the higher the birth order, the lower the IQ, when sibling number is held constant, while in other studies, the relationship between birth order and IQ is in the form of a U-shaped distribution or may even be positive (Heer, 1985).

Belmont and Marolla (1973) carried out a prominent study by simple empirical compilation of Raven Progressive Matrices scores from birth orders. When the IQ scores were disaggregated by levels of birth order and family size, a remarkably systematic pattern emerged, which suggested declining intelligence with increasing birth order and family size. A number of studies conducted in different parts of the United States and Europe also reflected that children in large families (i.e. with large numbers of siblings) have lower IQs than children in small families (Thomson, 1949; Blake, 1981, Bouchard, 1993; Lynn, 1996).

Blake (1989) analysed nearly every national data set available at the time in her study on family size and achievement and reported that as *sibship* size increases, performance in school declines. Across data sets, father's education was the only other variable in the status attainment model that consistently had a stronger effect than *sibship* size on educational attainment.

Researchers (Blau & Duncan, 1967; Featherman & Hauser, 1978) also posited that across a variety of samples methods, subgroups and educational outcomes, children with fewer brothers and sisters perform better. Similar findings that children in large families (i.e. with large numbers of siblings) have lower IQs than children in small families have been seen in several researches done in different parts of the United States and Europe (Thomson, 1949; Bouchard, 1993; Lynn, 1996).

Researchers (Zajonc & Markus, 1975; Zajonc, 1976 & 1983; Bjerkedal et al., 2007) reported that compared to children with one sibling, children with several siblings scored lower on tests of intellectual abilities. They articulate that the more children in the family, the

less will be the stimulating the intellectual environment. In a large *sibship* size, a child receive progressively less attention from the parents, and IQs decline steadily with birth order thus resulting that children in small families will have higher average IQs. Blake (1981, 1989) holds the same model and maintained that more children dilute the parental resources that provide nurture including support for intellectual development among developing children. As *sibship* size increases, performance in school declines.

In the study of birth order and family size and their relation to intelligence two models have been popularly cited. The confluence model (Zajonc & Markus, 1975) which posited that family environment influence children's intellectual development. When there are more adults and older children in the family, the richer is the environment. Conversely, with increasing numbers of younger children (e.g., after the birth of each child), the intellectual environment is diluted.

In contrast, the resource dilution model posited that parental resources are finite and that as the number of children in the family increases, the resources accrued by any one child necessarily decline. Siblings are competitors for parents' time, energy and financial resources and so the fewer *sibship* sizes, the better (Lindert, 1978; Blake, 1981 & 1989; Powell & Steelman, 1989; Downey, 1995). The two theories are quite similar but the dilution model is broader as it posited that parental resources consisted of a variety of phenomena including the material, financial and cultural quality of the home, parental treatment of children and opportunities afforded to children. It is also broader in its explanatory power in so far as it purports to explain the negative relation between *sibship* size and educational attainment in addition to the relation with intelligence (Downey, 2001).

Lynn (1959) opined that parents give more attention to children in small families, and to first born and last born (as compared with intermediates), and this enhanced the children's intelligence. In align to that, Zajonc, (1976 & 1983) stated that the child's IQ is partly determined by the attention given by the parents and siblings, the smaller the number of children in the family, the greater the amount of attention from their parents. Since each child received progressively less attention from the parents and IQs decline steadily with birth order thus resulting in the children of small families to have higher average IQs (Zajonc, 1976 & 1983). Zajonc and Markus (1975) reported that children with several siblings scored lower on tests of intellectual abilities than children with one sibling. They argued that the more children in the family, the less mature and stimulating the intellectual environment.

Blake (1981) had adapted the dilution model to help explain the negative birth order finding. Her theory was that more children dilute the parental resources that provide nurture

including support for intellectual development among developing children. In her further studies on family size and achievement, she analysed nearly every national data set available at the time and reproduced the general pattern noted by others: As *sibship* size increases, performance in school declines (Blake, 1989).

Bouchard (1993) put up another explanation for the decline of IQ in relation to birth order. He stated that the reason may be that later born children tend to have older parents and that older mothers tend to have a higher incidence of conditions including low birth weight babies that adversely affect the intelligence of their children. However, in more recent studies this finding has been argued upon on the ground that because of improvements in the quality of obstetric care, the relation between birth order and intelligence has not been found (Aliya, Jolly, Ehiri & Salihu, 2005).

Another probable justification suggested by Bouchard (1993) was that the relation between family size and intelligence is largely due to the tendency of more intelligent couples to have fewer children (Lynn, 1996; Lynn & Van Court, 2004). Since intelligence is transmitted from parents to children (the magnitude of the correlation between the average IQ of both parents and the IQ of their children is .72 according to Bouchard (1993), the result of this will be that children in small family will have higher average IQs than those from large families.

The causal effect of family size and birth order on intelligence has also been rejected by scholars (Rodgers, 1984 & 2001; Rodgers & Rowe, 1994; Rodgers et al., 2000) who argued that within-family data do not show the relationships between family size and birth order on intelligence that are present in the between-family data. Supporting Rodgers and colleagues, Abdel-Khalek and Lynn (2008) reported that, in their study among the Kuwaits negative correlation between family size and intelligence (children in larger families tend to have lower IQs) was barely present and the birth order effect that early born children tend to have higher IQs than later born children also does not appear to be present in their sample. The whole result indicated that there was no association between family position and IQ which suggested that the amount of attention that children received from their parents and older siblings has no significant effect on the children's intelligence.

Rodgers, Cleveland, van den Oord and Rowe (2000) compared the patterns from cross-sectional data to those from the few within-family studies and found that the negative birth order phenomenon disappeared when actual siblings' IQs were compared to one another. They explained the result by noting that in the cross-section, birth order can be an indirect measure of literally thousands of potential biases, including socio-economic status

(SES), maternal health, nutrition, parents' education, parental IQ, quality of schooling and dozens of other less obvious processes.

Wichman, Rodgers and MacCallum (2006) also concluded that birth order has no significant influence on children's intelligence and earlier reported birth order effects on intelligence are attributable to factors that vary between, not within, families. Some scholars maintained that the inverse relationship between the number of siblings and educational performance is artefactual and is actually a function of socio-economic status. Children from small families do better in school as compared from large families because large families are disproportionately from lower socioeconomic groups (Ernst & Angst, 1983).

The relationship between birth order and creativity has also undergone extensive research. Boling and Boling (1993) conducted an investigation in a private school using the Eisenman's Personal Opinion Survey and found that the highest creativity test scores were obtained by firstborn males and by second or later born females. Hypothetically, a firstborn male tend to receive greater intellectual stimulation in their family and along with other factors, predisposes them to be high in achievement and creativity (Eisenman, 1992). On the other hand firstborn females tends to inhibit their creativity since parents tend to be more restrictive toward their first child, and lack knowledge on how to deal with their new baby. Besides, they receive harsher socialization than males in most societies (Boling, Boling & Eisenman, 1995).

Runco and Bahleda (1986) found a significant relationship between birth order and divergent thinking tests scores. They reported that an only child scores the highest, followed by eldest, youngest, and then middle children. Another view is that first-born children are more creative than later-born children (Lichtenwalners & Maxwell, 1969; Eisenman & Schussel, 1970). Runco and Bahleda (1986) also reported that children who had several siblings scored higher on verbal DT tests than only children which were contrary to the finding of Zajonc and Markus (1975).

Socio-economic status

Socio-economic status (SES) is most commonly determined by various researchers by combining parents' educational level, occupational status and income level (Duncan et al., 1972; Hauser, 1994; McMillan & Western, 2000; Jeynes, 2002). According to Considine and Zappala (2002) socio-economic status is a person's overall social position to which attainments in both the social and economic domain contribute. Parental education is considered one of the most stable aspects of SES because it is typically established at an early age and tends to remain

the same over time. At the same time, parental income as an indicator of SES reflects the potential for social and economic resources that are available to the student. Moreover, parental education is an indicator of parents' income because income and education are highly correlated (Hauser & Warren, 1997). The third traditional SES component, occupation, is ranked on the basis of the education, and income required having a particular occupation (Hauser, 1994).

Researchers (Graetz, 1995; Owens, 1999; Dills, 2006; Hansen & Mastekaasa, 2006) opined that socio-economic background remains one of the major sources of educational inequality and adds that one's educational success depends very strongly on the socio-economic status of one's parents. They reported that children from high socio-economic status families perform much better at school compared to children from low socio-economic status families. Students who come from low socio-economic backgrounds are found to earn lower examination scores compared to their counter parts from high socio-economic backgrounds. It is believed that low socio-economic status negatively affects academic achievement because it prevents access to vital resources and additional stress is created at home (Eamon, 2005; Jeynes, 2002).

Review of the extant of literature has consistently revealed the correlation between SES with both intelligence and scholastic achievement (Kemp, 1955; McClelland, 1973; Bowles & Gintis, 1976; Martens, 1981; Verhoeven & Beuselinck, 1995). The SES have been found to moderate the heritability of children's intelligence as recent twin study reported significant moderation of the genetic component of children's intelligence by their parents' SES. It has been suggested that heritability of intelligence is higher in higher SES families because such families seem likely to provide more opportunities to realize differences in children's genetic potentials. Conversely, in lower SES families, genetic differences might be restrained by poverty (Fischbein, 1980; Rowe et al., 1999; Turkheimer et al., 2003; Tucker-Drob et al., 2010).

Loehlin (2000) also maintained that children with higher SES parents have greater intelligence tests scores than children with lower SES parents because the more favourable environment may boost IQ, which in turn boosts achievement. As for the relationship between self-concept and SES, most research has failed to find a significant relationship between the two constructs among children (Rosenberg & Pearlin, 1978; Wylie, 1979; Colom & Mendoza, 2007).

Contrary to that, various scholars (Jencks, 1972; Li, 1975) opined that parents' income and education do not predict their children scholastic achievement. They highlighted that the relationship between parents' income, as well as between parents' education and their

children's intelligence, is small which implies that these SES factors can hardly account for the correlation between children's intelligence and scholastic achievement. They also posited that it is the children's intelligence that predicts their scholastic achievement irrespective of parents' income and education.

Similarly, in an exhaustive and longitudinal study on the Hawaii Family Study of Cognition (HFSC), Nagoshi and Johnson (1985 & 2004) upholds that parental education and occupational status do not have a significant influence on their children's intelligence. Thienpont and Verleye (2003) also reported their findings that social class of origin is a factor of non-importance to account for the relationships among SES, education and intelligence. Furthermore, parental education was not an explaining variable either.

Parents' education is another important factor affecting the children's intelligence. Pamela and Davis-Kean (2005) uphold that parents' education influences child's achievement indirectly through parents' educational expectations and specific parenting behaviours and stimulating home behaviours. They also maintained that the overall total effect of parent educational attainment on child achievement was much stronger than the total effect of income. In essence, Parents' educational attainment has been found to be one of the most critical variables in the mortality of children across the world (Elo & Preston, 1996, Desai & Alva, 1998) and seems to be a major variable in children's wellbeing in general (Chen, Matthews, & Boyce, 2002).

Owens (1999) in her study on the relationship between parent and guardian educational attainment to academic achievement concluded that the educational attainment of parent or guardian does have a relationship with academic achievement of their children. She argued that the higher the parent or guardian's educational achievement, the higher the academic achievement. In the same line, Ceballo, McLoyd and Toyokawa (2004) pointed out that parental education also has effects on students' academic performance. Hansen and Mastekaasa (2006) posited that according to the cultural capital theory one could expect students from families who are closest to the academic culture to have greatest success. Pamela and Davis-Kean (2005) also found that parents' education influences child's achievement indirectly through its impact on the parents' achievement beliefs and stimulating home behaviours. Azhar and colleagues (2013) through analysis of their data showed that parental education and socio-economic status have momentous effects on student's academic achievements at masters' level.

Literature reviewed revealed that poverty and parents' socio-economic status have been linked as possible reasons for school mobility and academic performance of children (Alexander, Entwisle & Dauber, 1996; Mehana, 1997; Temple & Reynolds, 1999). Anderson

and Sullivan, (1993) also reported that a family's SES correlates with academics achievements of their sibling at secondary level. Similar findings have been reported by Hanes (2008) who carried out research on factors affecting students' academic performances and came up with the results that the higher level of SES emerge to be the best indicator towards the quality of students' achievement.

The parents' occupation is another component of the socio-economic status and is highly related to the family income, parents' education and academic performance. Parents with higher education have the capacity to sit on a higher occupational status, have more earnings which places them in a better position to be able to provide for the children's education (Mahale, 1978).

Considine and Zappala (2002) further reported that children from families with low income are more likely to exhibit lower levels of literacy, innumeracy and comprehension, lower retention rates, exhibit higher levels of problematic school behaviour. They are also more likely to have difficulties with their studies and display negative attitudes to school. King and Bellow (1989) even found that the duration of stay in the school is less for low socio-economic status family. They reported that children of farmers had fewer years of schooling than children of parents with white-collar jobs. Eamon (2005) also reported that students who come from low social economic backgrounds earn lower examination scores compared to their counter parts from high social economic backgrounds.

Parental income is deemed to be a strong factor on the academic and vocational successes of secondary school students too. According to his investigation, Akanle (2007) posited that parental income cannot be sufficient to sustain the academic and personal social life of the student in sub rural school areas as this can affects the psychological or homeostatic balance in the classroom, causing low concentration, low perception, frustration, sickness and emotional disability in academic performance of the students and can also lead to dropping out or withdrawal. Therefore a child may perform poorly in his school work and even drop out of school, when deprived of essential needs. (Akanle, 2007; Kainuwa & Yusuf, 2013)

According to Odebumni (1988) and Egbule (2004), finance is the avenue through which students' bills are paid. If their finances are not adequate, the situation may tend to affect their academic performance adversely. If, on the other hand, their financial needs are met adequately, probably their academic performance may be enhanced.

Chapter II

STATEMENT OF THE PROBLEM

The world today is one with rapid scientific and technological progress; needing high capacity manpower to sustain and maintain the pace of progress of the society. The education system is therefore laden with expectations in preparing future citizens, workers, and leaders. The academic performance of a person is one of the important yardsticks normally accepted to label a person as competent, proficient and dexterous. It must however be noted that academic performance is a product of many variables and the personal characteristics of learners and the environment at home, school and to some extent the community which provides help and support to students for the quality of their academic performance (Farooq et al., 2011).

Intelligence, creativity and a good self-concept are amongst the most important individual attributes in a progressive society. The greatest achievers are usually believed to be the highly intelligent, creative, diligent workers and the well-adjusted people. Intelligence itself is deemed to enable an individual to attain great heights of success in life in general, and in their academic performance in particular. It is also an important factor in developing the ability to adjust to his environment. Creativity is again not only crucial to help an individual to adapt to the various changes that is faced every day; it is also a stimulus for producing knowledge in different fields of study. It is also generally accepted that a confident attitude, a belief and a faith in oneself and one's ideas are essential in getting ahead. It has been found that the child who perceives himself to be able, confident and adequate as well as a person of worth has more energy to spend on academic performance and will use his intelligence to the utmost. On the other hand, the child who perceives himself as worthless, incapable and less confident may not come up to the optimum level of attainment.

Review of related literature exposed that the relationships between intelligence, creativity and their predictability to academic achievement have been investigated by a number of investigators (Naderi et al., 2009 & 2010a&b; Anwar et al., 2012; Anees, 2013). Some researchers viewed intelligence and achievement as identical constructs, others believed that the relationship between intelligence and achievement is reciprocal (Watkins, Lei, & Canivez, 2007). Still others (Laidra, Pullmann, & Allik, 2007) asserted that intelligence is causally related to achievement reported that students' achievement relied most strongly on their cognitive abilities through all grade levels.

Researchers (Laidra et al., 2007) have even claimed intelligence as measured by the Raven's Standard Progressive Matrices to be the best predictor of students' grade point average (GPA) in all grades. Similarly, several researchers (Neisser et al., 1996; Deary et al., 2007; Ebru & Firdevs, 2010; Chandra & Azimuudin, 2013) also reported a strong correlation between intelligence and academic achievement. However, there are another group of researchers (Harris, 2004; Chamorro-Premuzic & Reichenbacher, 2008; Ziegler, Knogler, & Bühner, 2009) who suggested that there is only a small to moderate positive correlations between academic achievement and the intelligence factor.

Contrary to that, Torrance (1962) and Yamamoto (1964a&b) reported differences in these correlations in the intelligence continuum. Some studies (Runco & Albert, 1986; Kim, 2005; Preckel, Holling & Wiese, 2005) had also indicated an absence of these variations across the intelligence continuum. Studies have also investigated intelligence thresholds in the relationships involving creativity, intelligence and academic achievement (Torrance, 1959, 1960; Getzels & Jackson, 1962, Yamamoto, 1964a&b).

Creativity in itself has a long history in psychology and educational sciences, and more particularly in reference to intelligence and academic performance (Runco, 2004; Sternberg & Lubart, 1996). Studies investigating the relationship between creativity and intelligence demonstrated that creativity has a nonlinear impact on intelligence (i.e., the threshold theory), meaning that creativity can improve cognitive performance among individuals with an intelligent quotient (IQ) lower than 120, but that creativity fails to relate to intelligence for individuals characterized by higher IQ (Simonton, 1994).

Contrasting views have been brought forth by various researchers with regards to the relationship between creativity and academic performance. Researchers (Yamamoto, 1964a; Murphy 1973; Marjoribanks, 1976; Asha, 1980; Getzels, 1982; Mahmodi, 1998; Karimi, 2000; Powers & Kaufman, 2004) reported that there is a relationship between creativity and academic achievement. Contrary to that, others researchers (Mayhon, 1966; Tranpraphat 1976; Behroozi, 1997; Nori, 2002) upholds that creativity is not related to academic achievement. In contrast, Ai (1999) referred to others who investigated this matter (Bentley, 1966; Smith, 1971; Shin, & Jacobs, 1973) and deduced that creativity was actually correlated with advanced levels of academic achievement. There is yet other researcher (Sierwald, 1989) who reported negative relationships between creativity and academic performance.

From review of literature, both intelligence and creativity have been found to have an impact on the academic achievement by different scholars. According Rindermann and

Neubauer (2004), the direct effect of intelligence on academic achievement has found to be much higher, while creativity has only a moderate effect on academic achievement.

The extent of the influence of genetics and environment on the intelligence is also one controversial area. While Jensen (1969) claimed intelligence to be primarily inherited and strongly argued that environment plays a minimal role, other researchers (Campbell et al., 2001; Ramey et al., 2006) posited that environment can change the IQ scores. Scholars claimed the significance of socio economic status (Seifer, 2001), the role of parenting (Hart & Risley, 1995) and the influence of schooling (Ceci & Gilstrap, 2000; Christian et al., 2001) on intelligence.

It is also important to reflect what might be considered original and creative in the work of a young child. While only a child prodigy may be expected to come up with something new and innovative, other scholars claimed that each child has their own originality or inventiveness; and that all young children have the potential for creativity (Tegano, Moran, & Sawyers, 1991; Mayesky, 1998; Isenberg & Jalongo, 2001). Runko (2003) maintained that each child's creative abilities should be related to his/her personal stage of development. For example, a young child's work may be adaptive and original for that particular child and/or in relation to children in their class or age group. Some scholars suggested that for adapting the notion of creativity to suit young children emphasis should be put on the creative process, rather than to the quality of their product, since young children may not have developed all the skills they need to achieve a successful creative outcome (Craft, 2003; Tegano et al., 1991).

Over the past decades, academic self-concept has also been extensively studied in relation to academic achievement (Marsh & Craven, 1997; Guay, Marsh & Boivin, 2003; Matovu, 2012). Researches had revealed that academic self-concept has a relationship with academic achievement (Cokley, 2000; Marsh, 2004; Awad, 2007; Tan & Yates, 2007). Marsh and colleagues (Marsh et al., 1997) ascribes the self-concept as a significant pre-notification of academic progress and states that positive self-concept seems to be linearly related to academic progress. Worrell (2007) suggested that low academic and social self-concept has a significant relation with low academic achievement.

Although there is support for a reciprocal relation between these variables (Marsh, Byrne & Yeung, 1999), this relation has not been examined fully from a developmental perspective, especially with younger children. Contemporary researches in the field self-concept have shown their interest towards academic self-concept and its development (Cheng & Watkins, 2000; Tymms, 2001; Marsh et al., 2002; Trautwein et al., 2006). A plethora of

studies conducted among adolescents and young adults had shown that academic self-concept decline from early to mid-adolescence reaching its lowest point in middle adolescence but again increase through early adulthood (Marsh, 1989; Liu & Wang, 2005). It has also been posited that as students grow older their academic self-concept becomes more stable, and tends to rise in the direction of their academic achievement (Jacob et al., 2002; Guay et al., 2003; Liu & Wang, 2005). However, some studies report that it tends to become weaker (Marsh & Yeung, 1997; Marsh et al., 2002).

Researchers (Marsh, 1989; Skaalvik & Hagtvet, 1990; Wigfield & Karpathian, 1991; Wigfield & Eccles, 1992; Eccles et al., 1993; Chapman & Tunmer, 1997; Marsh & Craven, 1997; Wigfield et al., 1997; Harter, 1999) offered a developmental perspective on the relation between academic self-concept and academic achievement. This developmental perspective addressed the correlation and causal aspects of the relation between these constructs. Marsh (1989 & 1990a) proposed that the self-concepts of very young children are very positive and not highly correlated with external indicators (e.g., skills, accomplishments, achievement self-concepts as inferred significant by others) but that with increasing life experience, children learn their relative strengths and weaknesses so that specific self-concept domains become more differentiated and more highly correlated with external indicators. A large number of studies indicated that at the beginning of schooling, pupils tend to overestimate their abilities but little by little they get closer to an appropriate self-concept (Wigfield & Karpathian, 1991; Wigfield et al., 1997; Guay et al., 2003; Valentine, DuBois & Cooper, 2004; Filipp, 2006;).

While there have been numerous studies on intelligence, creativity, self-concept, and academic achievement in various dimensions amongst adolescents and young adults, very few studies have been conducted amongst young children. Interestingly, it appears that until well into the twentieth century, it was wildly assumed that children and adults think, reason and remember in the same manner**.** Many societies assumed that while adults are mentally and physically superior to children, their cognitive processes are basically similar. This assumption was challenged by Piaget (1975) who argued that in several respect children differs from the adults in their way of thinking and reasoning (Baron, 1995).

The term ‘early childhood’ refers to children between the ages 0-8 and ‘young children’ refers to the children who are in the early childhood age range. Most young children are by nature curious and highly imaginative and each child is unique with an individual pattern and timing of growth. Similarly, each child also has individual personality, temperament, learning style, experience and family background (Dacey, 1989; Bredekamp & Copple, 1997). Middle childhood is in essence, a challenging stage to study since their verbal

and nonverbal skills are yet not fully developed which is likely to impede their skill to completely communicate their original ideas (Fishkin, 1998), their working styles and personalities usually have not yet matured (Isenberg & Jalongo, 2001) and their creative potentiality may not be fully comprehensible, thus, from their current personalities or traits, their creative potentiality cannot be fully predicted.

Torrance (1981) defined young children's creative process as the ways in which they use their creative thinking abilities. According to Torrance (1981), young children's creative thinking abilities refer to fluency, originality, and imagination; and he proposed that the most important ways that young children use their creative thinking abilities include: (1) moving in alternative ways; (2) imagining, empathizing, fantasizing, and assuming unaccustomed roles; (3) exploring alternative and unusual solutions to problems, and (4) improvising with common objects in the environment and using them for something other than the intended purposes.

Researchers are of the opinion that while studying about the creativity of young children, it is crucial to understand that the creativity of young children differs from older people's creativity. Among adults' creative behaviours, focus is usually on their domain-relevant skills, such as their factual knowledge, technical skills, and special talents, which are the basis of whatever they produce. Emphasis is also given in their creativity-relevant skills, such as working styles, attitudes, interest to generate new possibilities and openness to new ideas (Amabile, 1983; Isenberg & Jalongo, 2001).

Isenberg and Jalongo (2001) argued that young children do not have as much experience and expertise as adults, and their working styles and personalities usually have not yet matured. But whatever young children may lack in terms of expertise, experience or style, they can compensate for them with their unique ways of thinking and approaching a task. They also believed that imagination and fantasy are great creative assets of early childhood and that they differ from the literal, factual thinking preferred by adults.

Gardner (1993) describing the free and flexible thinking, stated that young children are not bothered by inconsistencies, departures from convention and non-literalness which often results in unusual and appealing juxtapositions and associations. Complementarily, Holden (1987) proposed that young children excel at three characteristics related to creative genius: (1) sensitivity to internal and external stimuli, (2) lack of inhibition, and (3) ability to become completely absorbed in an activity. Young children usually do not have sufficient verbal and nonverbal abilities to communicate their original ideas.

The system of education particularly the teaching methodology followed in Mizoram till recently is more of a teacher centered approach than learner centered thus leaving minimal opportunity to develop or even enhance the creativity of children. Mellou (1996) suggested that young children's creativity can be nurtured through educational settings in three respects: the creative environment, creative programmes and creative teachers and ways of teaching. The presence of nurturing factors in the schools of Mizoram and the fertility of the system for development of positive self-concept in children specially the young beginners deserves thorough understanding. Intelligence however being innate in human may be less affected by the teaching learning environment.

Even though numerous studies have been conducted on intelligence, creativity, academic self-concept and academic performance across the world, most studies in these area have involved older participants (high school students, college students, adolescents and young adults), published studies on young children in this area have been meager, especially the young children within the proposed population of the study. Young children between 6 to 8 years will be identified as participants for their genuine nature, not yet influenced by external factors like society, peers and religion. The present study attempts to provide empirical evidence to suggest the predictability of academic performance from the independent and compounding influence of intelligence, creativity and academic self-concept amongst the elementary students within the Aizawl Municipal Area of Mizoram.

Gender and education in the Mizo society

The mizo society is a patriarchal society where male dominance is prevalent in almost all spheres of life. Women do not hold equal position with their male counterparts; however she occupies a comparatively high position in the family in terms of responsibilities in the household affairs (Sangkima, 2004). Daughters do not have share in her father's property, but is expected to assist her mother in the housework even from her childhood days. While the boys can spare their time to go out and play, the girls are expected to stay at home to look after their younger siblings or to cook and draw water from the spring.

The position of women in the early mizo society can be deduced from the old mizo saying, "As a crab's meat is not a meat, so the word of a woman is no word" "Bad wife and bad fence can be changed", and "The wisdom of a woman does not extend beyond the limit of the village water source" (Lal Biak Thanga, 1978; Sangkima, 2004).

When the missionaries entered Mizoram in 1894, the first task they undertook was to reduce the mizo language into writing and starting school. The missionaries were convinced

that unless the women folks were also given education along with the men, the mizo would not make progress. They understood that education for the women must be planned in order to make them more useful in their homes and village (Hluna, 1992). The missionaries persuaded the parents to send their children to schools which at first were met with a poor response. Very few families were inclined to send their girls to school saying who will work if girls are sent to schools. In the year 1899, out of 56 pupils in the only school at Aizawl, only six girls were enrolled.

However, in modern mizo society, things have changed in many ways. Fathers have started giving a share to their female child, there is no distinction from the parents between male and female child for enrollment in schools. Females have become equally educated as their male counterparts and have become an earning member of many families. The girl enrollment in elementary school alone has come up to 1,21,452 as compared to 1,30,271 boys in Mizoram inclusive of all students of all management (DSE, 2014-2015). Women have also now been given a position even in the political platform and many women are found in various occupations in government and private sectors as well.

Brief History of Elementary Education in Mizoram

Prior to the advent of the British Missionaries in January 1894, there was no formal institution where children could learn. There were no script or alphabet and the language itself has not yet been reduced to writing. In the absence of any forms of written scripts, education in different aspects was imparted informally usually through verbal instructions and practical trainings. Parents and elders of the community however imparted the basic social skills, art of tribal warfare and other responsibilities to the youths in their own home and in the '*Zawlbuk*' which is a Bachelor's dormitory. *Zawlbuk* was the apex institution of the village wherein all the unmarried and even newly married young men spend the night. It is here at *Zawlbuk*, that the ethics of cooperation, tolerance, fellow-feeling, discipline and equality are imparted to the youths. 'The indigenous method of instruction were so systematic that in many respects they were more effective in moulding the lives of the people in the society than the method being applied under the system of formal education' (Sangkima, 2004).

In 1893, the first formal education was introduced in Mizoram. The first school was opened for the children of the *sepoys* who were serving in Mizoram, with Hindi as a medium of instruction. Education for the mizo does not seem to be the purpose of opening a school at that time. It was after the arrival of the two pioneer missionaries, James Herbert Lorrain and

Fedrerick William Savidge in Mizoram in the year 1894 that the seed of education was sowed for the Mizo.

The two missionaries after intense learning of the mizo language reduced the language into writing by adopting Roman script which began the process of formal education in the land. The two fathers of the mizo alphabet opened a school on 1st April, 1894 with only two students but was soon closed down to enable them to complete their literary works before moving on to their new assignment in the Abor country (now Arunachal Pradesh). The two missionaries were replaced by Rev. D. E. Jones of the Welsh mission who re-opened the school on 28th February 1898.

The school was organized into elementary school and advanced school in 1900, when Rev. Edward Rowland took over the school. The nomenclature was changed in 1903, the elementary section became the Lower Primary section (up to class III) and the advanced section became the Upper Primary section (up to class V).

The school set-up was again rearranged in 1929 and the upper primary school was abolished. The lower primary school was made a two-year course with classes A and B, primary school was to have classes I to III and middle schools were made to have classes IV to VI. In 1982, a new pattern was introduced where four classes (class I to IV) were placed in the primary schools and three classes (class V to VII) were placed in the middle school. Since 2011, the structure has been re-arranged as Class I-IV in the primary section and Classes V-VIII in the middle section.

In 1903, Mizoram was visited by the Chief Commissioner of Assam who proposed opening of five new government schools annually up to a maximum of twenty schools and instructed the Director of Public Instruction (DPI) to utilize the services of the missionaries as far as possible. As a result, new village schools were opened. The number of schools gradually increased and as per the suggestion made by Sir B. Fuller, the then Chief Commissioner of Assam, all the schools including the Government schools along with all the teachers was transferred to the mission on 1st April 1904. Rev. Edwin Rowlands was made the Honorary Inspector of Schools (LLyod, 1991).

The number of schools had also increased to 22 with 781 students in 1907 and the upper primary school was raised to a status of middle english school. The honorary inspector of school Rev. Rowland rearranged the course of lower primary to four years, the upper primary to two years and the middle english to a two year courses. One is eligible to join english medium high school only after graduating from the Middle English. The number of

schools gradually increased and by the time India attained Independence in 1947, the number of primary schools had increased to 258 and middle schools to 22. Since then the number of schools have been growing steadily and besides the schools owned by the government, many private schools have come up today.

The growth of elementary schools may be highlighted in the table below:

Growth of Elementary Schools in Mizoram

YEAR	No. of Primary Schools	No. of Middle Schools
1894	1	Nil
1947 (Independence)	258	22
1972 (Union Territory)	425	184
1987 (Statehood)	1032	477
2000 (Millennium)	1224	735
2015	1328	1022

{Schools include those managed by Central Govt., SSA, State Govt., Deficit and Aided Schools, Local bodies. Purely private schools are excluded (Malsawmi, 2010; Directorate of School Education, Mizoram, 2014-15)}

The first lower primary examination was held in June 1903 at Aizawl with only 27 candidates out of whom 19 passed. The first upper primary examination was also conducted in October 1904, only two students passed. In 1909, the first middle english examination was held and six students were successful. Later on the Mizoram Board of School Education (MBSE) was constituted in 1976, and the MBSE became responsible for the Primary and Middle School Leaving Certificate examination (PSLC & MSLC). The Board conducted the first PSLC in 1978 and the MSLC examination in the year 1977. The nomenclature of Primary School Leaving Certificate was later changed to Primary Scholarship Examination in 1981, which continued till 1990.

Similarly, the Middle School Leaving Certificate (MSLC) examination was carried on by the MBSE till 1999. After which no common examination for the whole state has been conducted again for the elementary stages. However in order to determine student's eligible for merit scholarship, common examination continued in the districts conducted by the respective District Education Committee.

The examinations, common and school based were basically paper-pencil test which are content based. Three exams were normally conducted at all levels. The students usually resort to rote learning and were expected to produce notes and facts learnt in the classroom.

The intelligent and those that are good in rote learning and reproducing it usually performed well and topped the classes.

It may be mentioned here that the Government of India had brought out a new National Curriculum Framework in 2005 (NCF; NCERT, 2005), wherein *Learning Without Burden* was the central point of reference. The committee reviewing the old NCF were of the opinion that learning at school cannot become joyful unless we change our perception of the child as receiver of knowledge and move beyond the convention of using textbooks as the basis for examination. It challenged the popular belief that there has been an explosion of knowledge which led to thick textbooks and vast syllabi.

The committee therefore recommended a major change in the syllabi and textbooks which tend to place stress on the children to become aggressively competitive and exhibit precocity. It also recommended a fundamental change in the matter of organizing the school curriculum and also in the system of examination, which forces children to memorize information and reproduce it. It stressed that learning for the sake of being examined in a mechanical manner takes away the joy of being young and delinks school knowledge from everyday experience (NCERT, 2005).

The Right of Children to Free and Compulsory Education Act, 2009 (RTE) Chapter-V (29.2 a-h) gave importance to the all-round development of the child, building up the child's knowledge, potentiality and talent. The Act (RTE, 2009) also emphasized that learning should be imparted through activities, discovery and exploration in a child friendly and child centered manner and in making the child free of fear, trauma and anxiety and in helping the child to express his/her views freely. It advocated comprehensive and continuous evaluation of the students understanding of the knowledge and their ability to apply the same (The Gazette of India, 2009).

After the enactment of the RTE Act (2009), Comprehensive Continuous Evaluation (CCE) has been followed in all the elementary schools of Mizoram from the year 2011 which is deemed to make examination more flexible and integrated to the classroom life and to ensure that learning is shifted away from rote learning as reflected in the guiding principles of the NCF (NCERT, 2005). Now the children are given the opportunity to learn through various activities like doing project work, experiments, observation, field visits and other activities apart from their textbooks, all of which are incorporated in their learning assessment and evaluation. The children are now evaluated through formative assessment which comprises of different activities and unit test and summative evaluation which is somewhat like the old traditional form of examination but to a much lighter degree.

After the RTE came into force on 1st April 2010, the state government was more or less compelled to switch the evaluation system in the elementary school. From the traditional method of examination which has been used for almost a century to an entirely new Comprehensive Continuous Evaluation (CCE) system was nerve racking for the teachers, the students and the public. SCERT Mizoram, being made the Academic Authority for the elementary stage of schooling by the state government immediately started preparing the groundwork for implementation of CCE from the next academic year 2011. Guidebook was prepared, details worked out, and key resource persons trained. Imparting training on CCE to all the elementary teachers and convincing the public is no easy task, therefore it can be said that till today, the shift in the evaluation system is still in the transitional period. Teachers are still learning how to effectively conduct the CCE procedure, and the students are beginning to get used to the new system of evaluation which entails pedagogic change in the classroom as well.

Family structure in a mizo society

The mizo families are closed knitted, where father is the head of the family. Normally it is a nuclear family, but it is customary for the youngest son to live with his parents for he is considered the heir to inherit his father's property and it is his responsibility to look after his parents in their old age. Once the older sons marry and have a family of his own, he moves out of the family house to set up a new house for himself and his family. It is also normal practice for the unmarried uncle or aunt to live in their parent's home. In this case, the size of the family can be large while an average mizo family is between 5 to 7 people (Sangkima, 2004).

Socio-economic status of the mizo family

Education has become an important chapter in the life of the mizo tribe. With a literacy rate of 91.58 % in the 2011 census (Statistical Handbook of Mizoram, 2014), Mizoram is the second highest literate state in India next only to Kerala. It can be assumed that all the mizo children had been enrolled in the school at least once; however the completion rate may not be too high. Therefore in modern Mizoram, most of the parents have been to schools and are literate. Normally, both parents have their own way of earning a living; it may be service to government job, and self-employment or employment in the private sectors. The latest (in print) per capita income of Mizoram in 2012-13 is Rs. 63,413 as compared to Rs. 5,36,24 in the previous year (Mizoram Economic Survey, 2014-15).

Objectives of the study

The study to determine the predictability of academic performance from intelligence, creativity and academic self-concept is designed with the following objectives:

1. To elucidate the pattern of variation due to 'sex' (male and female) on intelligence, creativity, academic self-concept and academic performance.
2. To discern the pattern of variation due to 'school' (government and private) on intelligence, creativity, academic self-concept and academic performance.
3. To elucidate the pattern of variation due to 'sex x school' on intelligence, creativity, academic self-concept and academic performance.
4. To demonstrate the role of the other 'demographic variables' (age, number of siblings, birth order, family size, fathers' and mothers' educational qualification, fathers' and mothers' occupational status, family monthly income, fathers' and mothers' religious involvement, and fathers' and mothers' social involvement) in explaining variances on intelligence, creativity , academic self-concept and academic performance.
5. To illustrate the predictability of academic performance from intelligence, creativity and academic self-concept encompassing for the demographic variables.

Hypothesis

In view of the target objectives, theoretical formulations and empirical findings, the following hypotheses are set forth for the study.

1. Females as compared to males would show greater scores on intelligence, creativity, academic self-concept and academic performance.
2. Participants from private schools as compares to government schools will show greater scores in intelligence, creativity, academic self-concept and academic performance.
3. Gradation of scores on intelligence, creativity, academic self-concept and academic performance is expected from males in government schools, females in government schools, males in private schools and females in private schools.
4. The demographic variables (age, number of siblings, birth order, family size, fathers' and mothers' educational qualification, fathers' and mothers' occupational status, family monthly income, fathers' and mothers' religious involvement, and fathers' and mothers' social involvement) are expected to exhibit their impact on intelligence, creativity, academic self-concept and academic performance.
5. It is expected that academic performance will emerge to be predictable from intelligence, creativity and academic self-concept.

Chapter III

METHODS AND PROCEDURE

Sample

The 391 participants (191 males and 200 females) between 6-8 years of age were selected based on multistage random sampling procedure. The selected 187 participants were from government primary schools and 204 were from government recognized private schools. The sampling frame firstly encompasses for the 'School': with the 'Government School' that include schools managed by the central and state government, local bodies and schools aided by the Government of Mizoram; and "Private School' are those not aided by the Government in Aizawl Municipal Area, Mizoram. Secondly, the sampling frame encompasses for random selection of the schools were based on computer generated random number. Thirdly, the sampling frame encompasses for the classes I, II and III, with the participants within the age range of 6 to 8 years. Finally, the selection of the participants under each class of study was again based on computer generated random number.

Finally, 18 government schools and 17 private schools were randomly selected. This is in view of the fact that, 2 government and 3 private schools initially selected were found to be defunct. In addition, 16 participants failed to complete all the required demographic responses and the behavioural measures and therefore were excluded from analyses.

The demographics profiles of the participants along age, sex, number of siblings, birth order, family size, fathers' educational qualification, mothers' educational qualification, fathers' occupational status, mothers' occupational status, family income, fathers religious involvement, mothers' religious involvement, fathers' social involvement and mothers' social involvement are carefully recorded to match or equate the participants in the study.

Design of the Study

In view of the target problems of the study, the participants were selected based on 'Sex' (male and female) and 'School' (government and private). Thus, the study portrays 2 x 2 (2 Sex x 2 school) factorial design to be imposed on the measures of intelligence, creativity, academic self-concept and academic performance. As was envisioned, the background demographic information was incorporated to match or equate the participants to maintain homogeneity. The sample characteristic table for the 2 x 2 factorial design of the study is presented in Table-1.

Table-1: The sample characteristic table of the 2 x 2 (2 Sex x 2 school) factorial design of the study.

	Government School	Private School	Total
Male	77	114	191
Female	110	90	200
Total	187	204	391

Psychological tools

The study to determine the predictability of academic performance from intelligence, creativity and academic self-concept encompassing for the demographic variables employed: Wechsler Intelligence Scale for Children-Fourth Edition (WISC-IV; Wechsler, 2004), Thinking Creatively in Action and Movement (TCAM, Torrance, 1981), Academic Self-concept Scale purposively designed for the study and Academic Performance Index based on Parents' Rating and Teachers Rating of their children as well as the Academic Grade of the last examination.

Wechsler Intelligence Scale for Children-IV (WISC-IV; Wechsler, 2004): is an individually administered instrument employed to assess the cognitive ability of children. In the study, the composite scores from Working Memory Index (WMI) with Digit Span Forward (α=.75), Digit Span Backward (α=.70), Letter Number Sequencing (α=.85) and Arithmetic (α=.87) as the core subtest as well as the composite scores from Perceptual Reasoning Index (PRI) with Block Design (α=.81), Picture Concepts (α=.84) and Matrix reasoning (α=.84) as the core subtest were administered. The WMI reflects ability for attention, concentration and working memory and the PRI reflects ability for perceptual reasoning and organization.

Thinking Creatively in Action and Movement (TCAM; Torrance, 1981): measures creative thinking abilities as well as creativity demonstrated through movements. The four subtests taps the ability to produce alternative ways of moving; ability to imagine, empathies, fantasize and assume unaccustomed roles; indicator of creative thinking potentials; and ability to improvise common objects for utility other than intended purpose. The TCAM measures 'Fluency': the capacity to generate many ideas, answers, responses, possibilities to a given situation/problems (α=.89); 'Originality': the capacity to generate new, unique and novel responses/solutions (α=.74) and 'Imagination': the ability to build mental pictures, visualize possibilities and new

things or reach beyond practical limits (α=.90). The inter-rater reliability index (Cohen's κ) as conducted among fifty participants in the study emerged to be acceptable for 'Fluency' is .89, 'originality' is .74 and 'imagination' is .90.

Academic Self-Concept (ASC): Based on empirical researches reporting the academic self-concept of children (Marsh et al., 1983; Fakhroo et al., 2008), twelve items measuring academic self-concept for middle childhood or early elementary school years was developed. The scale encompasses curricular and co-curricular activities as well as the relationship with peers and teachers. Each item was to be rated on a three-point scale from *True=3*, *Partly True=2* and *False=1* with the higher comprehensive score indicating higher academic self-concept. The internal consistency for the academic self-concept for the participants under study emerged to be robust (α=.96).

Academic Performance (AP): The Parents' Rating Form and Teachers' Rating Form of their children was developed following the works of previous researchers (Marsh & Yeung, 1997; Hay, Ashman, & van Kraayenoord, 1997; Goldenberg et al., 2001; Friedel, Marachi & Midgley, 2002; Guay et al., 2003; Glick & White, 2004; Naderi et al., 2010a&b; Bacon, 2011; Mohammadyari, 2013). The form included curricular and co-curricular activities as well as cognitive, psychomotor and affective domains. Each item was to be rated on five-point Likert scale from *'Strongly Disagree=1; Disagree=2; Neutral=3; Agree=4; and Strongly Agree=5'*. The higher comprehensive score indicating better academic performance. The percentage of marks secured for the major subjects in the academic was also recorded. The composite scores based on weighted average from grade point average of the last examination, teachers rating of children (α=.90), parents rating of children (α=.87) form the base for academic performance.

Procedure

At the very outset, consent was obtained from the Director of School Education, Government of Mizoram, to carry out the study in the randomly selected government schools; similarly all the principals and respective authorities of the private schools were also approached prior to visiting their schools. All the selected schools cooperated very well and extended all possible help to the researcher while conducting the tests. Informed consent was also obtained from all the parents, each parents of the participants were given forms containing the demographic information (sex, school, age, number of siblings, birth order, family size, fathers' educational qualification, mothers' educational qualification, fathers' occupational status, mothers' occupational status, family income, fathers' religious

involvement, mothers' religious involvement, fathers' social involvement and mothers' social involvement) as well as parents' rating forms, which after filling up was returned to the researcher.

The class teachers of all the participants were given a teachers' rating form for each individual and they were asked to write in the prescribed form exactly what they perceive in the individual child. They were also asked to consult other teachers if they found it necessary. Lastly, to collect the academic grade of the participants, the principals and headmasters of each school were approached for their consent. After which the class teachers were asked to write the academic grade and marks obtained in the last examination by participants in a prescribed form.

Separate rooms or some other appropriate place were arranged by the respective schools, with tables and chairs for the participant and the researcher. The test to be conducted requires the children to be free of any inhibition. Therefore, prior to anything else, efforts was made to build a rapport with the participant which was particularly necessary because they are very young children, likely to feel ill at ease with stranger. The setting and the total environment of the room was also controlled from all other disturbing elements as far as possible.

The participants were then told that they are expected to assess themselves in the exact manner in which they perceive themselves in accordance with the academic self-concept form. They were told to answer to the questions to be asked as 'true, partly true or not true'.

To conduct the test of TCAM, enough space for the participants to walk, run and perform different activities was required. For the first activity, the children were told that today we will have a lot of fun moving and doing things in interesting ways. The participants were then asked to think up of many ways to walk or run within a marked space. While giving instruction to the participant, the researcher walked along with the child and practically showed the way how it is to be done. All the movements of the participants were recorded in the booklet along with the time taken using a stopwatch. No time limit was set. After the first activity, the participants were again told that it is now a time to pretend. They will have to pretend that they are birds, elephants, snakes etc. The researcher mimicked a bird flying or catching a ball and asked the child to do the same. After which the child was asked to perform the activity prescribed. The performance of the participant was assessed and graded in the prescribed form. In the third and fourth activity, the participants were asked to show the different ways of throwing a paper cup in a waste basket, and the last activity was to think up

of the many other ways the cup can be used. All the performance was written down and the time taken recorded using a stopwatch.

In the administration of the subtests of WISC- IV, the participants were ere praised on their prior performances and they were asked how they like the activity. Most of them said it was not difficult and that they liked it. After a brief halt, the children were made to sit on a chair opposite the researcher, with the table in between. The test booklet of WISC-IV and other materials were kept out of the sight of the participant. They were then told that, the next game they are about to play is going to be very interesting and they are required to think and perform as best they could. This was followed by careful conduction of the experimental tasks which incorporated block design, matrix reasoning, picture concept, letter number sequencing, digit span forward , digit span backward and arithmetic. After the last test, the participants were thanked and asked how they like the performance.

The first activity of WISC was the *block design*. Initially the researcher showed the participants what they are expected constructing the model and the picture in the stimulus book. Two trails were given. The time taken by the participants to complete the construction of the design was recorded and they were made to continue the activity till they made three consecutive mistakes within the time limit after which they were made to discontinue. This was followed by the *digit span* activity which is divided into two tasks: *digit span forward* and *digit span backward*. In *digit span forward* the child repeats numbers in the same order presented aloud by the researcher and in the *digit span backward* the child repeats numbers in the reverse order of that presented aloud by the researcher.

The third activity, *picture concept* was continued after a short break. In this activity, participant was shown two or three rows of pictures and they have to choose one picture from each row to form a group with a common characteristic. Two trials were given before the participant was made to process. The response given by the participants was recorded and was made to discontinue the activity after five consecutive incorrect choices. This activity was followed by the *letter-number sequencing*. In this activity, the researcher read a sequence of numbers and letters and the participants have to recall the numbers in ascending order and the letters in alphabetical order. The researcher told them that she is going to say a group of numbers and letters and the participants will have to repeat them by saying the number first starting from the lowest number then the letters in alphabetical order. The participants were made to practice two times. They were made to discontinue after three consecutive incorrect responses.

A short time of rest period was given before continuing the next activity which is *matrix reasoning*. In this activity, the participant looks at an incomplete matrix shown in the stimulus book and they have to select the missing portion from the five response options. The participants were made to look at the pictures in the stimulus book, pointing at the option pictures, the researcher asked which of these pictures should go here (pointing at the matrix) to make the picture complete. Three trails were given and the participants continue till they made four consecutive incorrect response. The last item was *arithmetic* where the participants have to mentally solve a series of orally presented arithmetic problems within a specified time limit. Trials were given as shown in the stimulus book. After which, the stimulus book was removed from the participant's view. The rest of the test items were read out and the participants had to give their responses. The questions were repeated only once if desired by the participants apart from that no further assistance was provided. The test continued till they gave four consecutive incorrect responses.

The data collected were then carefully screened for missing responses, uncompleted scales and sub-scales for the participants as well as for the teachers rating and parents rating. The data was then coded, cleaned and processed for the statistical analyses. The outcomes of the analyses are displayed in stages in the following chapter.

Statistical analyses

To ascertain the applicability of the psychological tools and the descriptive nature of the demographic variables and the psychological tools, the following statistical treatments were employed:

The study employed descriptive statistics to illustrate the demographic profiles of the participants and the nature of the psychological measures. Firstly, the psychometric properties of the items of the academic self-concept, parent's rating form and teacher's rating form were ascertained by employing item-total statistics with the inclusion criteria of $r > .2$. Secondly, the internal consistency of all the psychological tools (block design, digit span forward, digit span backward, picture concept, letter number sequencing, matrix reasoning, arithmetic, fluency, originality, imagination, academic self-concept, parent's rating and teacher's rating, academic grade) was ascertained.

Thirdly, the descriptive statistics (mean, standard deviation, skewness and kurtosis) for the demographic variable and the behavioural measures was computed. Fourthly, bivariate correlation coefficients was computed for sex, school and the other demographic variables (age, number of siblings, birth order, family size, father's educational qualification, mother's

educational qualification, father's occupational status, mother's occupational status, family income, father's religious involvement, mother's religious involvement, father's social involvement, mother's social involvement) as well as the psychological tools (block design, picture concept, matrix reasoning, digit span forward, digit span backward, letter number sequencing, arithmetic , fluency, originality, imagination, academic self-concept, parent's rating and teacher's rating, academic grade).

Finally, to elucidate the demographic information the study employ histogram to display the frequency of the demographic variables of the number of siblings, birth order, family size, father's educational qualification, mother's educational qualification, father's occupational status, mother's occupational status, family income, father's religious involvement, mother's religious involvement, father's social involvement, mother's social involvement.

To come to the target objectives of the study, analysis of covariance for the 2 x 2 (2 sex x 2 school) factorial design was employed. For the said purposes, series of analysis of covariance for '2 sex' x '2 schools' on each of the psychological tools were conducted separately with the other demographic variables (age, number of siblings, birth order, family size, father's educational qualification, mother's educational qualification, father's occupational status, mother's occupational status, family income, father's religious involvement, mother's religious involvement, father's social involvement and mother's social involvement) as the covariates. In addition, Fisher's least significant difference (LSD) was computed for the significant 'sex x school' interaction.

To sum up the overall findings of the study to determine the predictability of academic performance from intelligence, creativity and academic self-concept encompassing for sex, school and the demographic variable structural equation modelling was employed. The structural equation model incorporated bootstrapping and bias corrected percentile to enable determination of mediation of any significant indirect effect in the structural equation model. To determine the model fit in the study, the model chi-square shall be included as a criterion. In view of the nature of the participants, the variables measured and the sample size of the study the fit indices of: relative chi-square (CMIN/df) less than 2 (Ullman, 2001); Goodness of Fit Index exceeding .90 (Byrne, 1994); Incremental fit index (IFI) exceeding .90 (Bollen, 1989; Raykov, 2000 & 2005) ; Tucker Lewis Index (TLI) values over .95 (Hu & Bentler, 1995); Comparative Fit Index (CFI) exceeding .93 (Byrne, 1994); and the Root mean square residual (RMS) less than .05 (Stieger, 1990) shall be the main criteria for model fit.

Chapter IV

RESULTS

The results (Table-2) describes the mean, standard deviation, skewness and kurtosis of demographic variables (age, number of siblings, birth order, family size, fathers' educational qualification, mothers' educational qualification, fathers' occupation, mothers' occupation, family income, fathers' religious involvement, mothers religious involvement, fathers' social involvement and mothers' social involvement) as well as the scales and sub-scales of the behavioural measures of Wechsler's Intelligence Scale for Children (Wechsler, 2004; Block design, Digit span, Picture Concept, Letter Number Sequencing, Matrix Reasoning, Arithmetic), Thinking Creatively in Action and Movement (Torrance, 1981; fluency, originality and imagination), Academic Self- Concept and Academic Performance (Parent's Rating, Teachers' Rating and Academic Grade).

The result (Figure-1) portrays the age-wise distribution of the participants under the present study and the result (Figure-2) depicted the distribution of the number of siblings for the participants in the study. Among the 391 participants, 21 participants reported themselves to be without siblings and the majority (35.50%) of the participants reported that they are with two siblings. The birth order of the participants' ranges from being first born to seventh born and the majority (32.70%) reported that they are second born (Figure-3). The distribution of family size is portrayed in Figure-4. The family size ranges from 2 to 14 with the majority (28.40%) belonging to a five member family.

The histogram for parents' educational qualification (mothers' and fathers') is displayed in Figure-5. The majority of the fathers' (51.40%) and mothers' (56.80%) are under matriculate. In terms of occupation, majority of the fathers' of the participants (48.30) are self-employed whereas 55.50% of the mothers' of the participants are unemployed (Figure-6). There are 49.60% of the participants who belong to low income family and there are 47.60% in the moderate category (Figure-7). Only 11 participants are found to belong to high family income group.

The parents' of the participants indicated more or less similar trend in their Religious Involvement (Figure-8), whereas, the Social Involvement for mothers' show declining trend from high to low involvement and the fathers' show inverted 'U' trend (Figure-9).

Table-2: Mean, standard deviation, skewness and kurtosis of the demographic variables and the behavioural measures of the study (N=391).

	Mean	Standard Deviation	Skewness		Kurtosis		Cronbach's α
			Statistic	Std. Error	Statistic	Std. Error	
Age	7.15	0.80	-0.28	0.12	-1.39	0.25	-
NOS	2.31	1.29	0.79	0.12	1.28	0.25	-
Birth Order	2.34	1.26	1.12	0.12	1.44	0.25	-
Family Size	5.63	2.01	1.09	0.12	1.80	0.25	-
Fathers' EQ	2.01	1.24	0.91	0.12	-0.45	0.25	-
Mothers' EQ	1.80	1.12	1.32	0.12	0.85	0.25	-
FO	2.81	0.79	-0.24	0.12	-0.39	0.25	-
MO	1.77	1.01	1.00	0.12	-0.30	0.25	-
Family Income	1.53	0.55	0.38	0.12	-0.92	0.25	-
Fathers' RI	1.81	0.62	0.15	0.12	-0.54	0.25	-
Mother's RI	1.74	0.59	0.13	0.12	-0.51	0.25	-
Fathers' SI	1.81	0.57	0.00	0.12	-0.22	0.25	-
Mother's SI	1.47	0.53	0.45	0.12	-1.13	0.25	-
Block Design	8.38	3.04	0.04	0.12	-0.25	0.25	***.81***
Picture Concept	12.14	3.46	-0.27	0.12	0.06	0.25	***.84***
Matrix Reasoning	7.44	3.09	0.00	0.12	-0.55	0.25	***.84***
DSF	8.43	3.66	-0.11	0.12	-0.76	0.25	***.75***
DSB	6.70	2.73	0.69	0.12	0.19	0.25	***.70***
L-NS	7.40	2.67	0.56	0.12	0.26	0.25	***.85***
Arithmetic	22.52	6.75	0.19	0.12	-0.31	0.25	***.87***
Fluency	27.97	7.65	-0.14	0.12	-0.03	0.25	***.89***
Originality	42.98	16.86	0.97	0.12	1.97	0.25	***.74***
Imagination	41.29	20.77	0.72	0.12	0.61	0.25	***.90***
ASC	22.57	3.64	-0.86	0.12	0.68	0.25	***.63***
Parent's Rating	29.84	2.70	-0.97	0.12	0.58	0.25	***.87***
Teacher's Rating	57.38	9.50	-0.53	0.12	-0.11	0.25	***.90***
Academic Grade	59.57	9.49	-0.68	0.12	-0.31	0.25	-

[NOS=Number of Siblings; FO=Fathers' Occupation; MO=Mother's Occupation; EQ=Educational Qualification; RI=Religious Involvement; SI=Social Involvement; DSF=Digit Span Forward; DSB=Digit Span Backward; L-NS=Letter-Number Sequencing; ASC=Academic Self Concept]

Figure-1: The histogram for the age-wise distribution of the participants under study.

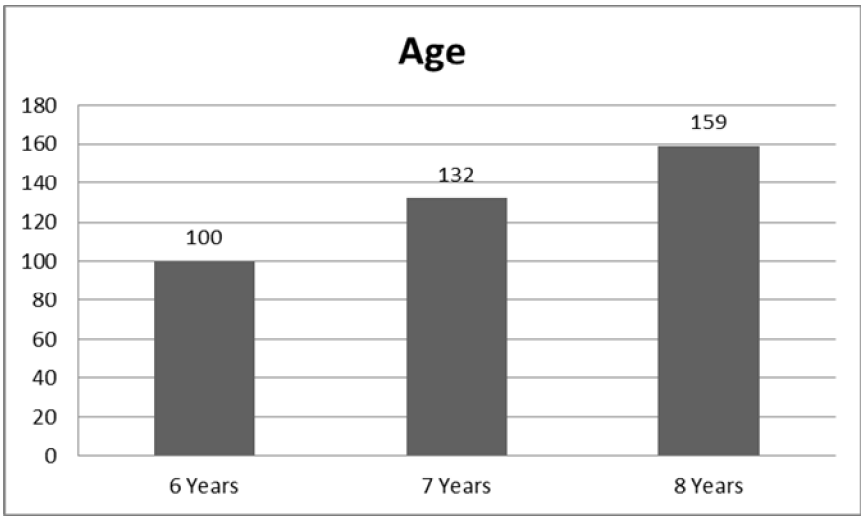


Figure-2: The histogram for the distribution of the number of siblings of the participants under study.

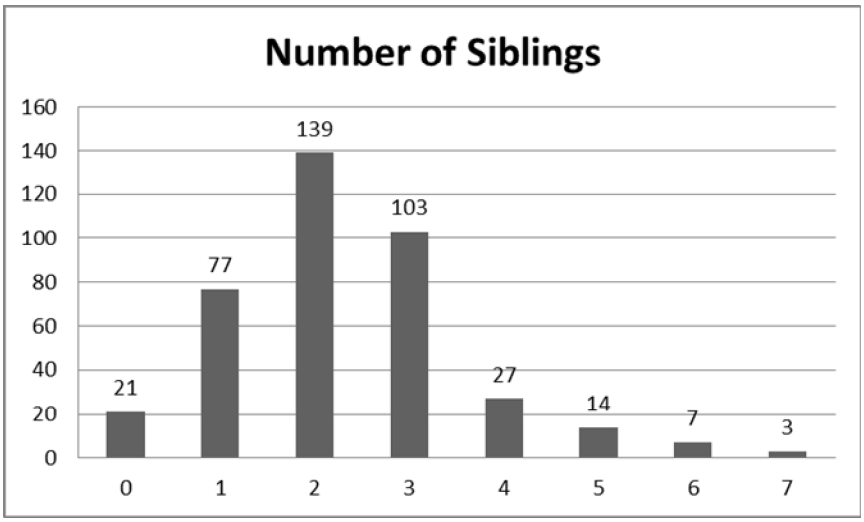


Figure-3: The histogram for the distribution of the birth order of the participants under study.

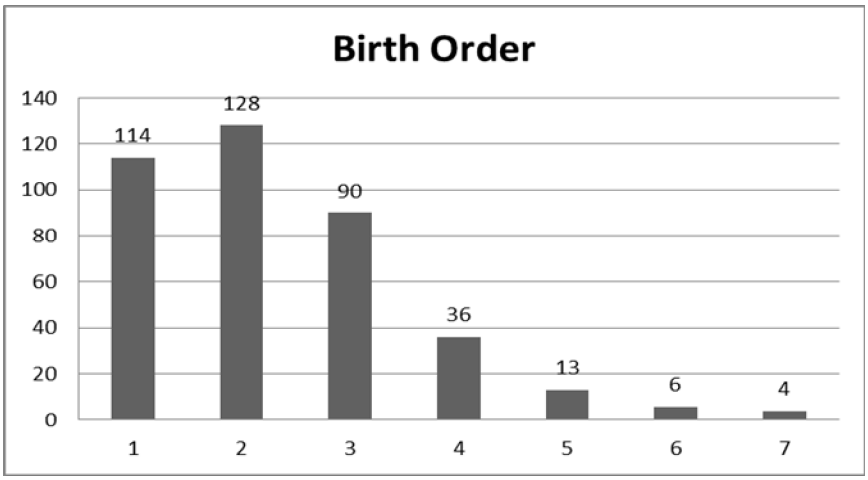


Figure-4: The histogram for the distribution of the family size of the participants under study.

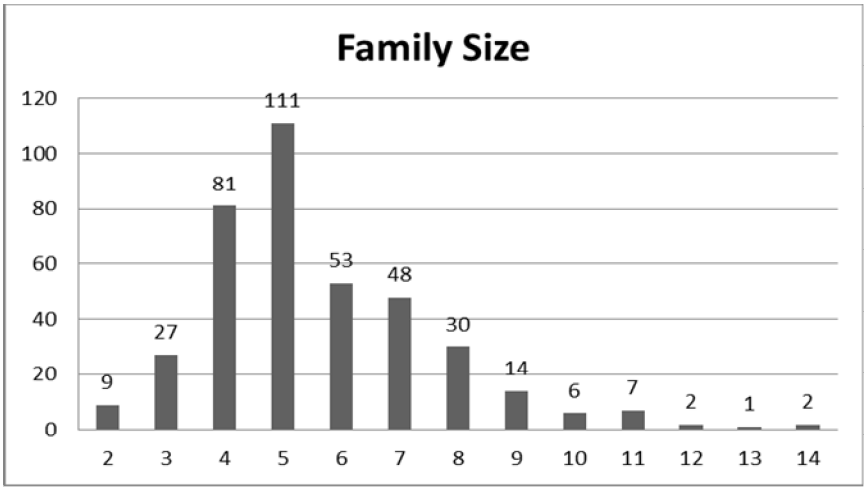


Figure-5: The histogram for the distribution of the parents' educational qualification of the participants under study.

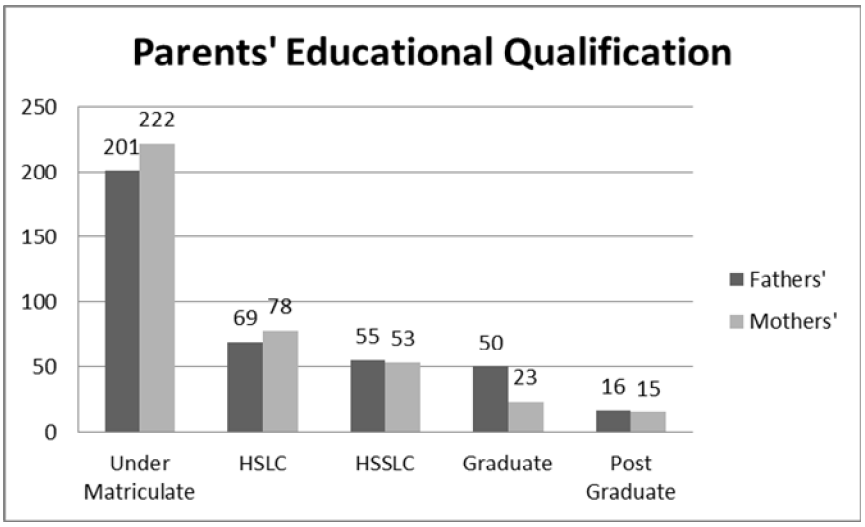


Figure-6: The histogram for the distribution of the parents' occupational status of the participants under study.

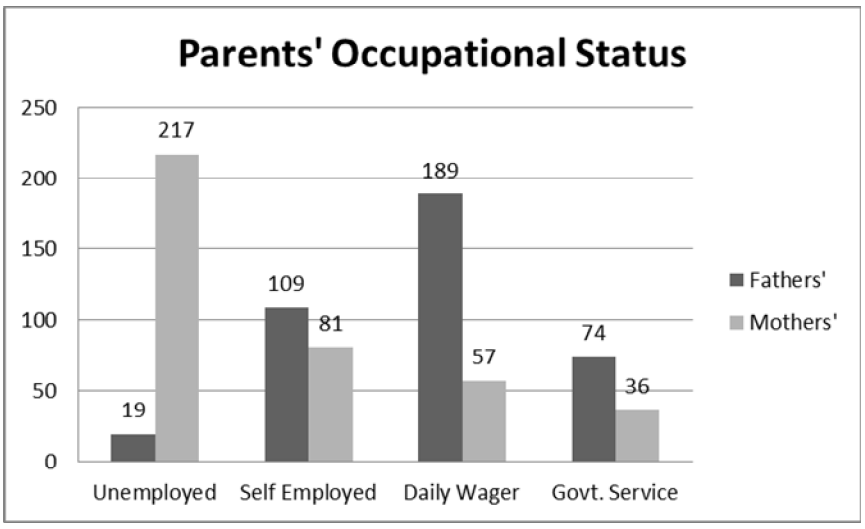


Figure-7: The histogram for the distribution of the monthly income of the participants under study.

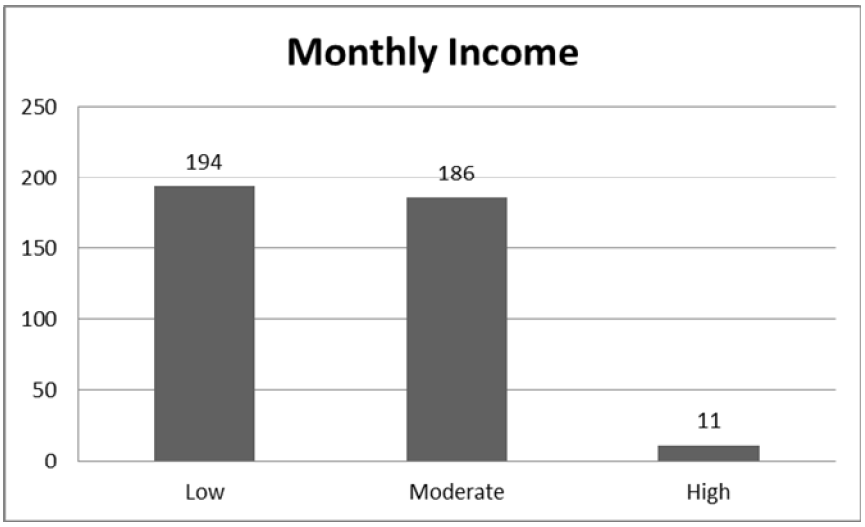


Figure-8: The histogram for the distribution of the parents' religious involvement of the participants under study.

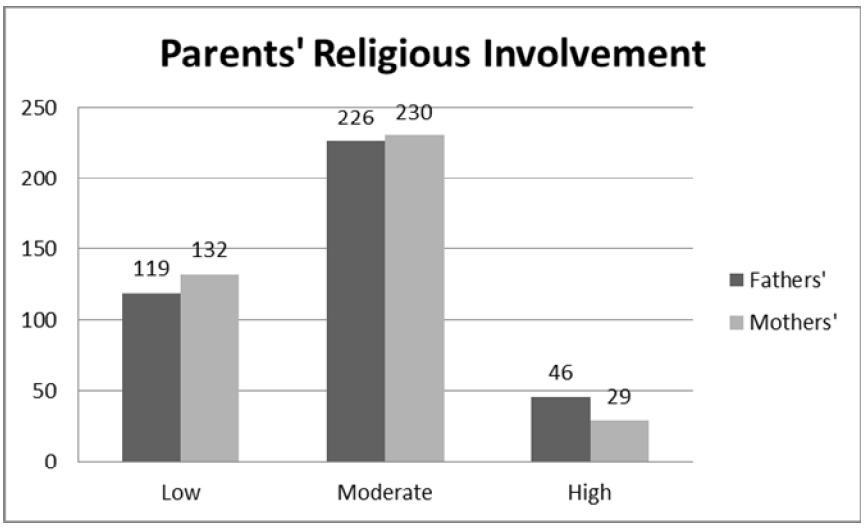
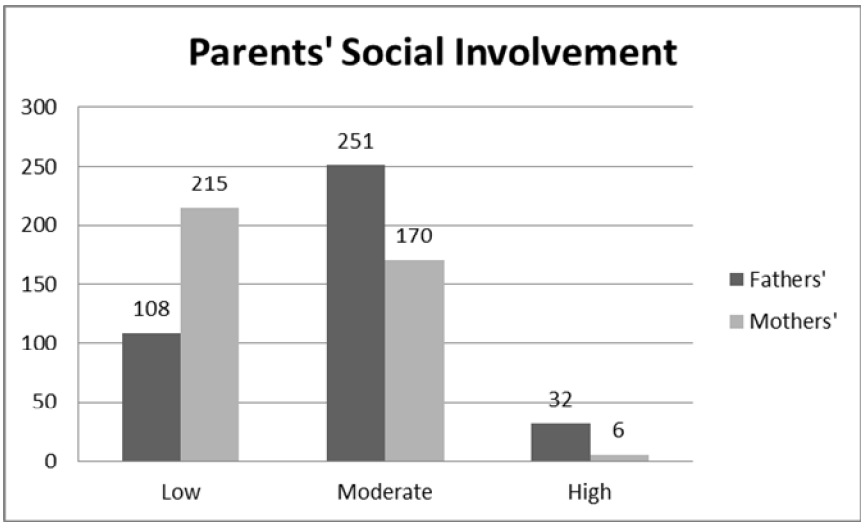


Figure-9: The histogram for the distribution of the parents' social involvement of the participants under study.



The study employed the norms and conversion tables of the administration and scoring manual of the WISC-IV (Wechsler, 2004). Therefore, the composite score derived from the block design, picture concepts and matrix reasoning subtests are obtained to indicate perceptual reasoning index (PRI). Similarly, the composite scores from forward and backward digit span, letter-number sequencing and arithmetic subtests are obtained to indicate working memory index (WMI).

The bivariate correlation matrix of the 'sex', 'school', demographic variables (age, number of siblings, birth order, family size, fathers' educational qualification, mothers' educational qualification, fathers' occupation, mothers' occupation, family income, fathers' religious involvement, mothers' religious involvement, fathers' social involvement and mothers' social involvement) and the scales and sub scales of the behavioural measures is presented in Table-3.

There are instances of significant bivariate relationships observed between 'sex', 'school' and other demographic variables. The results (Table-3) revealed: significant negative relationship between 'sex' and 'school'; 'school' shows negative relationship with number of siblings and birth order and positive relationship with fathers' educational qualification, mothers' educational qualification, mothers' occupation and family income; number of siblings and birth order that are positively correlated emerge to be positively correlated with family size and negatively correlated with fathers' educational qualification and mothers' educational qualification and number of siblings also emerged to be negatively related with mothers' occupation; family size emerged to be positively correlated with fathers' educational qualification and family income; mothers' occupation show negative correlation

with fathers' occupation and positive correlation with family income; religious involvement and social involvement of the parents' of the participants show positive relationship in all possible combination; and mothers' religious involvement shows negative correlation with family income.

Significant bivariate relationships are also observed between 'sex', 'school' and other demographic variables with that of the behavioural measures. The results (Table-3) revealed: 'sex' to be positively correlated with academic grade and negatively correlated with imagination; 'school' emerged to be positively correlated with perceptual reasoning index, working memory index, parent's rating and academic grade; age emerged to be positively correlated with perceptual reasoning index, working memory index, fluency and originality; number of siblings and birth order emerged to be negatively correlated with working memory index, imagination and academic grade, except for that between birth order and imagination; family size emerged to be positively correlated with fluency; fathers' and mother's educational qualification emerged to be positively correlated with perceptual reasoning index, working memory index and parent's rating, and fathers' educational qualification also emerged to be positively correlated with teachers' rating and academic grade; mothers' occupation emerged to be positively correlated with parents' rating; family income emerged to be positively correlated with perceptual reasoning index, working memory index and parent's rating; and parents' religious and social involvement failed to show significant relationship with the behavioural measures, except for the significant positive relationship between fathers' social involvement and parents' rating.

Finally, significant bivariate relationships are also observed between the scales/sub-scales of the behavioural measures. The results (Table-3) revealed all the sub scales of WISC-IV (perceptual reasoning index and working memory index), TCAM (fluency, originality and imagination) and the indicators of academic performance (parents' rating, teachers' rating and academic grade) to be positively correlated; perceptual reasoning index and working memory index emerged to be positively correlated with all the indicators of academic performance; teachers' rating and academic grade emerged to be positively correlated with fluency and negatively correlated with academic self-concept; and imagination emerged to be positively correlated with parents' rating.

Table-3: The bivariate correlation matrix of the demographic variables and the behavioural measures of the study (N=391).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Sex-1	-																							
School-2	-	-																						
Age-3	-.03	-.04	-																					
Number of Siblings-4	.02	-.25**	-.03	-																				
Birth Order-5	.05	-.21**	-.09	.78**	-																			
Family Size-6	-.01	.02	-.04	.33**	.20**	-																		
Father's EQ-7	-.05	.33**	.06	-.12*	-.12*	.11*	-																	
Mother's EQ-8	-.10	.36**	.02	-.16**	-.16**	.03	.50**	-																
Father's Occupation-9	.03	-.10	.02	.07	.04	.04	.04	-.04	-															
Mother's Occupation-10	-.05	.11*	.03	-.11*	-.01	.00	.18**	.32**	-.10*	-														
Family Income-11	-.04	.34**	.04	-.10	-.02	.13*	.39**	.33**	.01	.19**	-													
Father's RI-12	-.05	-.02	.04	-.02	-.01	.01	.07	.09	.01	.02	.03	-												
Mother's RI-13	-.09	.02	-.04	.00	.06	.03	-.02	.04	.00	-.01	-.13*	.44**	-											
Father's SI-14	-.08	.05	.07	-.02	.00	.03	.07	.07	-.01	.00	-.03	.37**	.32**	-										
Mother's SI-15	-.10	.01	-.06	-.02	.06	.02	-.06	-.02	.04	.05	-.09	.19**	.52**	.37**	-									
PRI-16	-.07	.12*	.13**	-.10	-.09	.01	.23**	.15**	-.03	.03	.25**	.00	-.05	-.06	-.04	-								
WMI-17	.08	.23**	.36**	-.10*	-.11*	.00	.21**	.13*	.04	-.01	.18**	.04	.00	.00	-.05	.51**	-							
Fluency-18	-.04	-.07	.10*	.02	.05	.11*	-.02	-.04	-.01	.04	-.01	-.07	-.05	-.07	-.02	.10	.11*	-						
Originality-19	.01	-.06	.16**	-.01	.04	.09	.00	-.04	-.04	.07	.00	-.07	-.07	-.06	-.01	.11*	.09	.87**	-					
Imagination-20	-.21**	.00	.06	-.13*	-.07	.00	.02	.06	-.03	.09	.06	-.07	.01	.07	.08	.07	.03	.48**	.46**	-				
Academic Self Concept-21	.01	-.06	-.01	-.07	-.05	-.01	-.05	.00	-.09	.06	.00	.07	.01	.04	.08	-.06	-.07	-.06	-.01	-.03	-			
Parent's Rating-22	.03	.12*	.10	-.08	-.07	.06	.21**	.15**	-.09	.13**	.16**	.00	.07	.13*	.07	.25**	.27**	.06	.04	.11*	-.04	-		
Teacher's Rating-23	.06	.09	.04	-.04	-.03	.06	.13*	.06	-.02	.02	.05	-.03	.06	.00	.03	.25**	.35**	.12*	.06	.03	-.10*	.35**	-	
Academic Grade-24	.10*	.25**	-.04	-.11*	-.10*	.07	.13**	.09	-.01	.02	.08	.00	.01	.00	-.07	.22**	.29**	.11*	.09	.09	-.12*	.32**	.45**	-

** ***Significant at .01 level;*** * ***Significant at.05 level***

[EQ=Educational Qualification; RI=Religious Involvement; SI=Social Involvement; PRI=Perceptual Reasoning Index; WMI=Working Memory Index]

Following the target plan of the study, '2 sex' x '2 school' factorial design was employed. To illustrate the effect of 'sex' and 'school' on the behavioural measures, series of two-way analysis of covariance with the demographic variable as the covariate was separately run for the sub-scales or sub-tests of the psychological tools.

Table-4a: Levene's test of equality of error variances in the analysis of covariance for 'Sex' and 'School' on the behavioural measures with the demographic variables as the covariate.

Behavioural Measures	F	df1	df2	Sig.
Perceptual Reasoning Index (PRI)	0.47	3	387	0.71
Working Memory Index (WMI)	1.12	3	387	0.34
Fluency (F)	0.17	3	387	0.92
Originality (O)	0.10	3	387	0.96
Imagination (I)	5.80	3	387	0.00
Academic Self Concept (ASC)	1.44	3	387	0.23
Parents' Rating	2.19	3	387	0.09
Teachers' Rating	6.77	3	387	0.00
Academic Grade	4.21	3	387	0.01

The results (Table-4a) highlighted Levene's test of Equality of Error variances in the series of analysis of covariance for the effect of 'sex' and 'school' on the behavioural measures with the demographic variables as the covariate. Significant instances of heterogeneity of variance were observed with imagination sub-scale of TCAM, teachers' rating and academic grade. These findings suggested for the careful interpretation of the significant independent and interaction effect of 'sex' and 'school' on these behavioural measures, and will remain reserved as the unique characteristics of the population under study.

The results (Table-4b) displayed the significant instances for the effect of the demographic variables in the analysis of covariance for the effect of 'sex' and 'school' on the behavioural measures with the demographic variables as the covariate. The largest effect size for the demographic variables was obtained for 'age' on working memory index. The supplementary evidences from the bivariate relationship (Table-3) revealed older participants to manifest greater scores on working memory index. Similarly, significant effect of 'age' also emerged on perceptual reasoning index, fluency and originality. The perusal of results (Table-3)

revealed older participants to show greater scores on each of perceptual reasoning index, fluency and originality.

Table-4b: The significant effect of the demographic variables in the analysis of covariance for 'Sex' and 'School' on the behavioural measures with the demographic variables as the covariate.

Independent Variable	Dependent Variable	Sum of Squares	df	Mean Square	F	Sig.	η^2	Observed Power
Age	PRI	255.06	1	255.06	6.14	0.014	0.02	0.70
	WMI	2966.54	1	2966.54	63.42	0.000	0.14	1.00
	Fluency	1490.24	1	1490.24	5.31	0.022	0.01	0.63
	Originality	5046.69	1	5046.69	12.16	0.001	0.03	0.94
Number of Siblings	Originality	2062.30	1	2062.30	4.97	0.026	0.01	0.60
	Imagination	59.91	1	59.91	4.84	0.028	0.01	0.59
Family Size	Fluency	1935.58	1	1935.58	6.89	0.009	0.02	0.74
	Originality	2823.45	1	2823.45	6.80	0.009	0.02	0.74
Father's EQ	PRI	289.30	1	289.30	6.96	0.009	0.02	0.75
	WMI	188.90	1	188.90	4.04	0.045	0.01	0.52
	Parents' Rating	491.63	1	491.63	5.88	0.016	0.02	0.68
Family Income	PRI	491.48	1	491.48	11.83	0.001	0.03	0.93
Father's RI	Imagination	62.87	1	62.87	5.08	0.025	0.01	0.61
Father's SI	Parents' Rating	360.84	1	360.84	4.31	0.038	0.01	0.54

[EQ=Educational Qualification; RI=Religious Involvement; SI=Social Involvement; PRI=Perceptual Reasoning Index; WMI=Working Memory Index; ASC=Academic Self Concept]

The results (Table-4b) also revealed: number of siblings to manifest significant effect on originality and imagination and the supplementary results (Table-3) indicated: negative relationships between number of siblings with originality and imagination; and family size show significant effect on fluency and originality corroborating with the significant positive relationship observed for family size with fluency and originality (Table-3).

Fathers' educational qualification also indicated significant effect on perceptual reasoning index and working memory index as well as parent's rating of their children (Table-4b). The perusal of the bivariate correlation matrix (Table-3) suggested that the perceptual reasoning index and working memory index as well as parent's rating increases with the higher educational qualification of the fathers' of the participants. Similarly, family income that shows positive relationship with perceptual reasoning index (Table-3) also manifested significant effect on perceptual reasoning index in the analysis of covariance (Table-4b).

Finally, fathers' religious involvement and fathers' social involvement manifested significant effect on imagination and parents rating respectively (Table-4b). The bivariate correlation matrix (Table-3) indicated negative relationship between religious involvement and imagination and positive relationship between fathers' social involvement and parents' rating.

Table-4c: The effect of the 'Sex' and 'School' in the analysis of covariance for 'Sex' and 'School' on the behavioural measures with the demographic variables as the covariate.

Dependent Variable	Sources of Variation	Sum of Squares	df	Mean Square	F	Sig.	η^2	Observed Power
Perceptual Reasoning Index	Sex	67.75	1	67.75	1.63	0.202	0.00	0.25
	School	5.17	1	5.17	0.12	0.724	0.00	0.06
	Sex*School	185.00	1	185.00	4.45	0.035	0.01	0.56
	Error	15537.44	374	41.54				
	Total	17781.64	390					
Working Memory Index	Sex	343.43	1	343.43	7.34	0.007	0.02	0.77
	School	751.20	1	751.20	16.06	0.000	0.04	0.98
	Sex*School	2.30	1	2.30	0.05	0.825	0.00	0.06
	Error	17493.26	374	46.77				
	Total	22797.63	390					
Fluency	Sex	282.32	1	282.32	1.01	0.317	0.00	0.17
	School	397.46	1	397.46	1.42	0.235	0.00	0.22
	Sex*School	258.66	1	258.66	0.92	0.338	0.00	0.16
	Error	105047.84	374	280.88				
	Total	110842.87	390					
Originality	Sex	3.93	1	3.93	0.01	0.923	0.00	0.05
	School	442.93	1	442.93	1.07	0.302	0.00	0.18
	Sex*School	771.73	1	771.73	1.86	0.173	0.00	0.27
	Error	155196.95	374	414.97				
	Total	168205.18	390					
Imagination	Sex	202.27	1	202.27	16.35	0.000	0.04	0.98
	School	38.14	1	38.14	3.08	0.080	0.01	0.42
	Sex*School	46.50	1	46.50	3.76	0.053	0.01	0.49
	Error	4625.86	374	12.37				
	Total	5171.67	390					
Academic Self Concept	Sex	0.26	1	0.26	0.04	0.850	0.00	0.05
	School	18.88	1	18.88	2.60	0.108	0.01	0.36
	Sex*School	5.75	1	5.75	0.79	0.374	0.00	0.14
	Error	2717.76	374	7.27				
	Total	2840.85	390					
Parent's Rating	Sex	188.12	1	188.12	2.25	0.135	0.01	0.32
	School	10.13	1	10.13	0.12	0.728	0.00	0.06
	Sex*School	179.74	1	179.74	2.15	0.144	0.01	0.31
	Error	31288.28	374	83.66				
	Total	35203.98	390					
Teacher's Rating	Sex	244.79	1	244.79	2.72	0.100	0.01	0.38
	School	64.12	1	64.12	0.71	0.399	0.00	0.13
	Sex*School	0.59	1	0.59	0.01	0.936	0.00	0.05
	Error	33686.97	374	90.07				
	Total	35099.95	390					
Academic Grade	Sex	627.39	1	627.39	6.56	0.011	0.02	0.72
	School	1645.63	1	1645.63	17.21	0.000	0.04	0.99
	Sex*School	132.26	1	132.26	1.38	0.240	0.00	0.22
	Error	35755.59	374	95.60				
	Total	39928.01	390					

Independent and interaction effects of 'sex' and 'school'

The results (Table-4c) highlighted the independent and interaction effects of 'sex' and 'school' for the series of two-way analysis of covariance with the demographic variable as the covariate separately run for the sub-scales or sub-tests of the psychological tools. The results (Table-4c) revealed: significant independent effect of 'sex' on working memory index, imagination and academic grade; significant independent effect of 'school' on working memory and academic grade; and significant interaction effect of 'sex x school' on perceptual reasoning index.

The closer examination of significant independent effect of 'sex' revealed females to show greater mean score on working memory index (Mean = 28.55; SD = 7.60) as compared to males (Mean = 27.36; SD = 7.67) and is depicted in Figure-10. Similarly, females obtained greater mean score on academic grade (Mean = 86.38; SD = 9.12) as compared to their male counterpart (Mean = 84.37; SD = 10.99) and is highlighted by the mean slope (Figure-11). Conversely, the male participants (M = 23.36; SD = 3.38) indicated greater scores on imagination (Figure-12) as compared to female participants (Mean = 21.83; SD = 3.37).

Figure-10: The mean slope for the significant independent effect of 'sex' on WMI.

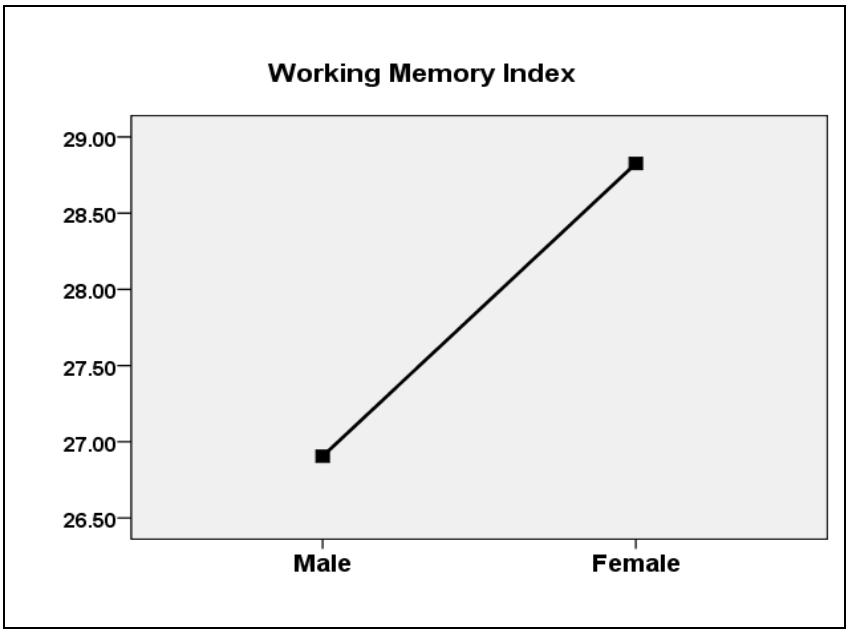


Figure-11: The mean slope for the significant independent effect of ‘sex’ on imagination.

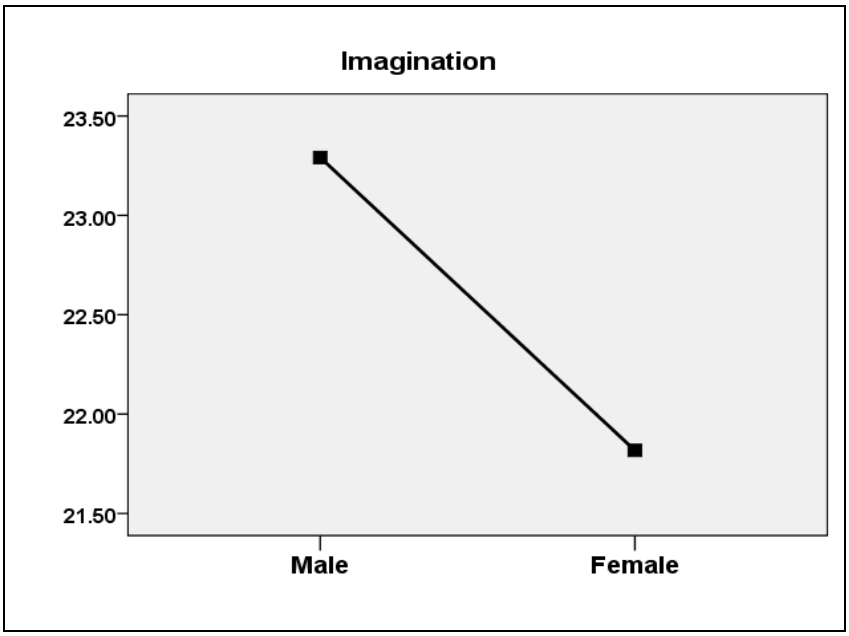


Figure-12: The mean slope for the significant independent effect of ‘sex’ on academic grade.

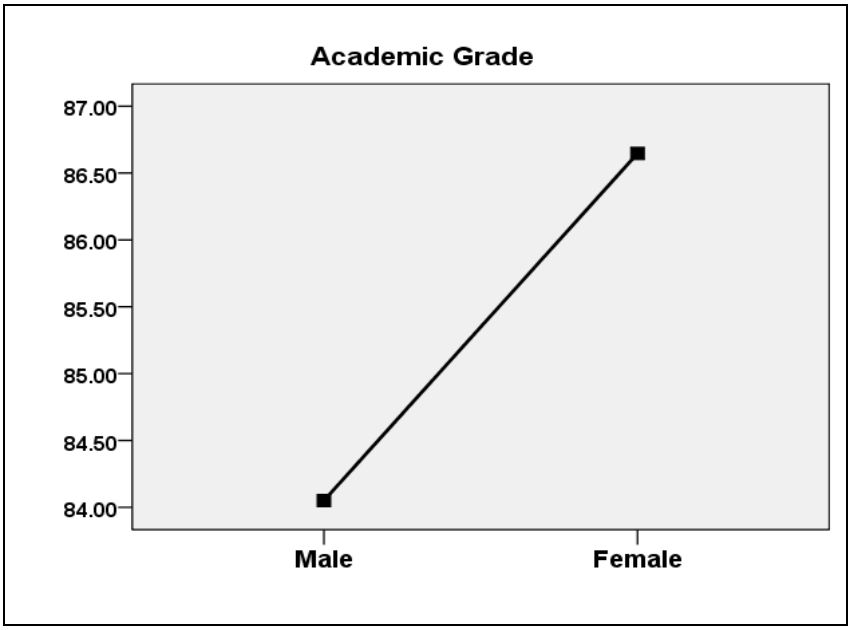


Figure-13: The mean slope for the significant independent effect of 'school' on WMI.

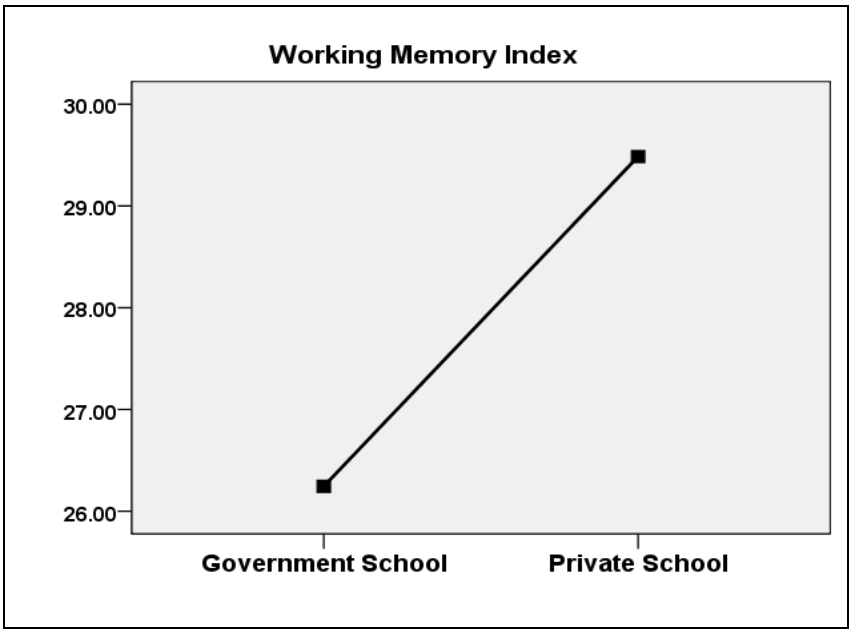
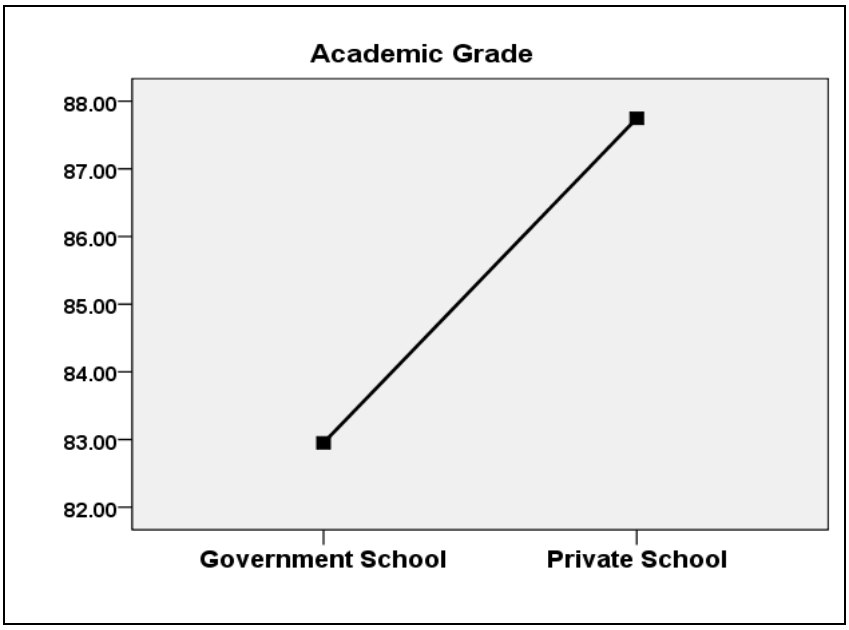


Figure-14: The mean slope for the significant independent effect of 'school' on academic grade.



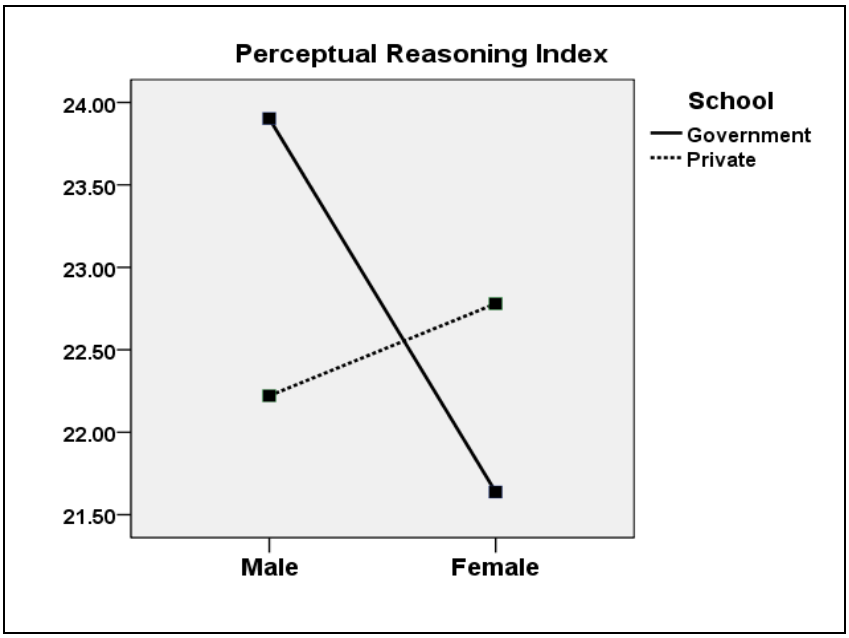
The results (Table-4c) also manifested significant interaction effect of 'sex x school' on perceptual reasoning index. Fisher's lowest significant differences test (Fisher's LSD) was employed (Table-4d) to elucidate the pattern of mean differences. The results (Table-4d) revealed the female participants from the government schools to show significantly lower scores on perceptual reasoning index as compared to all the three counter comparable groups in the '2 Sex x 2 school' cells of the main design. The results (Figure-15) depicted the significant interaction effect of 'sex x school' on PRI.

Table-4d: Fisher's LSD for sig 'Sex x School' interaction on PRI.

'Sex x School'	**Means**	**20.86**	**22.86**	**23.11**	**23.49**
Female/Government School	**20.86**	X			
Male/Government School	**22.86**	1.99**	X		
Male/Private School	**23.11**	2.25**	.26	X	
Female/Private School	**23.49**	2.63**	.63	.38	X

** ***Significant at .01 level.***

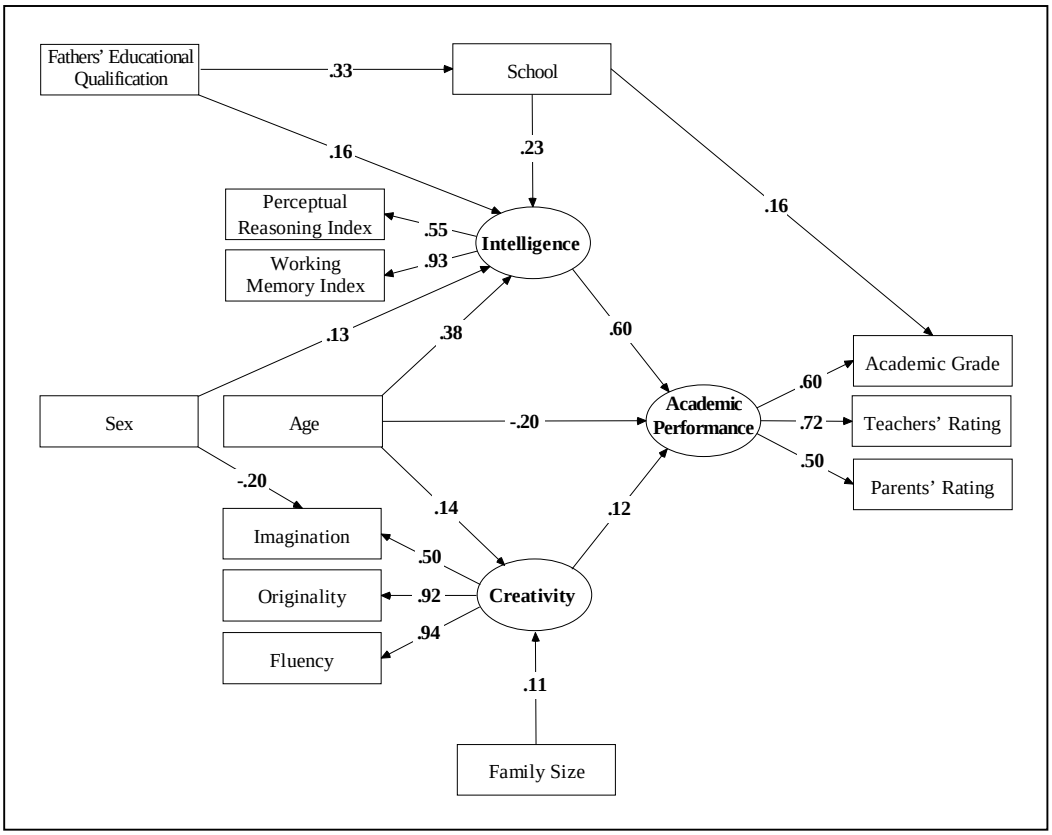
Figure-15: The mean slopes for the significant interaction effect of 'sex x school' on PRI.



As was envisioned and highlighted in the methods and procedures, the study proceeded to covariance structure analysis by employing structure equation modelling. In view of the target objective of the study, predictability of academic performances from intelligence, creativity and academic concept was attempted with multipronged inclusion of the demographic variables. Therefore, structure equation modelling with bootstrapping of the sample size = 5000 and bias corrected percentile of .05 level was employed.

The structural equation model (Figure-16 & Table-5) for the predictability of academic performance from intelligence, creativity and academic self-concept along with the demographic variables reveals significant overall chi-square goodness-of-fit statistics (χ^2 = 102.06; df = 58; p<.01). However, the fit indices emerged to be fully acceptable with the model fit summary revealing healthy fit indices (chi-square (CMIN/df = 1.76; GFI = .96; IFI = .97; TLI = .95; CFI = .96 and RMS =.04). Thus, the structural equation model revealed the predictability of academic performance from intelligence, creativity and academic self-concept along with the other demographic variables following the admonition of researchers suggesting for model fit indices (Ullman, 2001; Byrne, 1994; Bollen, 1989; Raykov, 2000 & 2005; Hu & Bentler, 1995; Stieger, 1990).

Figure-16: The structural equation model for the predictability of academic performance from intelligence, creativity and academic self-concept along with the demographic variables.



The direct predictability of academic performance emerged positively from creativity and intelligence and negatively from 'age'. The mediation of the predictability of academic performance from 'age' also emerged with creativity and intelligence. Besides, school positively significantly predicted the academic grade (Figure-16 & Table-5).

Supplementary findings also emerged in the structured equation model with higher intelligence for female as compared to males and the reverse on imagination; fathers educational qualification directly predict higher intelligence and indirectly through school; and larger family size to predict higher level of creativity.

Table-5: The regression weights for the significant paths in the structural equation modelling for the predictability of academic performance from intelligence, creativity and academic self-concept along with the demographic variables.

			Estimate	**S.E.**	**C.R.**	**P**
School	<---	Fathers' Educational Qualification	0.13	0.02	6.92	***
Intelligence	<---	School	3.24	0.72	4.50	***
Creativity	<---	Family Size	0.86	0.41	2.11	*
Intelligence	<---	Sex	1.83	0.68	2.69	**
Intelligence	<---	Age	3.40	0.43	7.96	***
Creativity	<---	Age	2.79	1.03	2.72	**
Intelligence	<---	Fathers' Educational Qualification	0.89	0.29	3.07	**
Academic Performance	<---	Age	-1.50	0.52	-2.90	**
Academic Performance	<---	Creativity	0.05	0.02	2.05	*
Academic Performance	<---	Intelligence	0.51	0.09	5.71	***
WMI	<---	Intelligence	1.00			
PRI	<---	Intelligence	0.53	0.06	8.27	***
Academic Grade	<---	Academic Performance	1.00			
Teachers' Rating	<---	Academic Performance	1.13	0.15	7.73	***
Parents' Rating	<---	Academic Performance	0.78	0.11	6.93	***
Fluency	<---	Creativity	1.00			
Originality	<---	Creativity	1.21	0.06	19.35	***
Imagination	<---	Creativity	0.12	0.01	10.76	***
Academic Grade	<---	School	3.20	0.91	3.53	***
Imagination	<---	Sex	-1.47	0.31	-4.69	***

*** ***Significant at .001 level;*** ** ***Significant at .01 level;*** * ***Significant at.05 level***

In addition, the standardized indirect effects that emerge in the structural equation model also revealed partial mediation of the predictability of: academic performance from 'age' through intelligence and creativity (direct effect = .07; p = .00; indirect effect = .05; p = .00) and intelligence from fathers' educational qualification through school (direct effect = .06; p = .01, indirect effect = .05; p = .01).

Finally, the SEM also revealed significantly non-mediated indirect path to academic performance, a latent variable in the model, from sex (indirect effect = .08; p = .01), school (indirect effect = .14; p = .01) and fathers' educational qualification (indirect effect = .14; p = .01).

Qualitative observations

Researcher did not face any problem during the data collection process, though tiring at times; it was a fun time to see some of the participants enthusiastically perform the task of the test items. Permission to use the school for collection of the data was obtained from the Director of School Education; a copy of the letter of approval was given to all the Principals and Headmasters of the selected schools. Initially, the Heads of the selected schools were contacted personally by going to the school or through phone and convenient dates was scheduled to visit the school. Therefore, on the appointed date, the researcher was met with a warm welcome in all the schools. The faculties in all the schools were warm and cooperative and were ever ready to extend any help required.

Since prior appointment was made, most of the schools had made an arrangement to conduct the test. Since most of the schools do not have an extra classroom, the tests were conducted in various places as arranged by the school; some were convenient while some were congested and noisy. So the test was conducted in the Principal's office, teachers' common room, assembly hall, computer lab, Principal's house, school classroom etc. The fact that some schools even gave holiday to the nursery and KG classes, and some combined the classes to vacate the classroom to accommodate the researcher shows the extent of cooperation received.

With the help of the teachers, the pre- randomly selected participants were identified, and instruction was given to the class teachers to send in the participants one by one to the assigned room. The concerned teachers were also given the Teachers' Rating form along with the form to enter the academic grade and marks obtained by the participants from their last examination. The filled up forms are usually ready and handed over to the researcher at the end of the day. No negative remark was given by any of the teachers, and no problem faced in giving rating was reported.

The parents' rating forms and consent were usually sent through their children, all but four or five parents returned the parents' rating form and gave consent to use their children as participants. Since the parents are not directly contacted, no qualitative observation can be reported on this.

Most of the selected participants show enthusiasm; the fact that they were the ones chosen amongst their peers appears to place them in a 'privileged' position. Some children even entered the experimental area beaming with pride. Of course there are participants specially girls who were shy and hesitant as they enter. So efforts were made to build a rapport with all the participants prior to introducing them to the test. The first task was to fill in the academic self-concept form, normally, the statement written was read out to the participants and they were asked to rate themselves in a three point scale (agree, partially agree and do not agree). The participants responded very well on this.

At the initial stage, many of the participants did not quite understand what was expected of them on the TCAM, so the researcher had to explain and show some examples of how it should be done. Most of the participants could perform well and were spontaneous, and appeared to enjoy it, while some participants were timid and were hesitant to perform the task. It was observed that generally, boys from the government schools were more audacious as compared to the other entire group. The tasks were not difficult and were easy to perform however, for some children ideas run out very quickly, and the same action were often repeated.

There were six different tasks to perform in the WISC. The participants were given some resting period after they finished the TCAM. After few minutes, they were made to sit in a chair with a table in front of them, while the researcher sat across the table. For all the participants this was the first time that they have an exposure to block test. After the researcher explained the process, they excitedly attempt the task and most of them could do the first three tasks easily. Similarly, all the task of WISC could be completed by all the participants. None dropped out midway. Each of the participants was given a chocolate bar after completion of the test.

Chapter V

DISCUSSION

The present study attempted to reveal the influence of intelligence, creativity and academic self-concept on the academic performance among young Mizo children between 6 to 8 years of age. As many as 391 young children (191 males and 200 females) willingly and enthusiastically participated in the study. The participants were randomly chosen using multistage random sampling procedure from two different management schools (Government and Private). The numbers of schools finally engaged for the study were 18 schools under the state government management and 17 schools under the private management. Informed consent was obtained and the complete background demographic information of each participant was recorded.

The academic self-concept scale developed based on previous empirical researches (Marsh et al., 1983; Fakhroo et al., 2008) was conducted by the researcher in one to one sitting with each participant. Subsequently, the experimental tasks involving: the working memory index (WMI) and the perceptual reasoning index (PRI) of Wechsler's Intelligence Scale for Children-IV (WISC-IV; Wechsler, 2004); and fluency, originality and imagination subtests of Thinking Creatively in Action and Movement (TCAM; Torrance, 1981) was conducted in simulated laboratory condition by the researcher. Finally, to obtain the academic performance index of each participant: the parent's and teacher's assessment of the participant on the curricular and co-curricular activities and the percentage of marks secured for the major subjects in the academic were recorded.

The analysis plan of the study to highlight the predictability of academic performance from intelligence, creativity and academic self-concept firstly include the descriptive statistics (mean, standard deviation, skewness, kurtosis and bivariate correlation matrix for the demographic variable and the psychological tools) as well as internal consistency (Cronbach's alphas) of the behavioural measures. Secondly, histogram was employed to display patterns of distribution along the demographic variables of number of siblings, birth order, family size, fathers' and mothers' educational qualification, fathers' and mothers' occupation, fathers' and mothers' religious involvement, and fathers' and mothers' social involvement.

Thirdly, analyses of covariance (ANCOVA) for the effect of 'sex' and 'school' on the behavioural measures with the other demographic variables as the covariate was employed to show the patterns of variation. Finally, structure equation modelling (SEM) was employed to

determine the predictability of academic performance from intelligence, creativity, academic self-concept and the demographic variables.

The block design, picture concept and matrix reasoning sub-test of the Perceptual Reasoning Index (PRI) emerged to show very good reliability indices. Similarly, letter number sequencing and arithmetic sub-test of the Working Memory Index (WMI) also emerged to show very good reliability indices. Whereas, the digit span forward and digit span backward sub-tests of Working Memory Index show slightly lower, but acceptable, reliability indices. Thus it was considered that, the Perceptual Reasoning Index and the Working Memory Index finds suitable applicability for measurement of intelligence in the target population.

The reliability indices of imagination sub-test of Thinking Creativity in Action and Movement (TCAM) emerged to be excellent and the fluency sub-test of TCAM also shows very good reliability indices. The originality sub-test of TCAM shows acceptable range of internal consistency. Therefore, the TCAM was also considered to be a good measure of creativity with good reliability in the target population.

The academic self-concept scale developed for the study emerged to show slightly lower but in the acceptable range of internal consistency for measurement purpose in the target population. Extensive researches on academic self-concept (Marsh, 1989 & 1990a; Wigfield & Karpathian, 1991) reported that the self-concepts of very young children are very positive and may appear to be biased in relation to external indicators of self-concept but these very high self-concepts tend to become less positive and more differentiated as they grow older. Marsh, Craven and Debus (1998) also reiterated that the academic self-concept improved as children (between 5 to 8 years of age) grew older and become more firmly established, realistic and stable with age.

The parent's rating form for the participants emerged to show very good reliability indices and the teacher's rating form emerged to be excellent in terms of internal consistency. The reliability indices for the academic grade is not evaluated as it is the average of the participant's scores in academic subjects of english, mizo, mathematics and environmental science subjects. These three indicators of academic performance as employed in the study emerged to show highly significant positive relationship in the study. Therefore, the parent's rating, the teacher's rating and the academic grade in terms of reliability finds trustworthiness as indicators of academic performances.

The skewness and kurtosis of all the behavioural measures emerged to be less than ±1 except for the kurtosis of originality sub-test of the TCAM that remains within the common norms of ± 2 as suggested by George and Mallery (2010). Therefore all the tests and scales of the behavioural measures, even with small departures were considered not to inflate or deflate the outcomes of the statistical treatment. The imagination sub-test of the TCAM, teacher's rating and academic grade emerged to show heterogeneity of error variances. Therefore, the significant independent effect of 'sex' on imagination and the independent effect of 'sex' and 'school' on academic grades are reserved to be the characteristics of the target population; and shall be discussed and interpreted with precautions.

The terms 'ability', 'attainment', 'achievement' and 'performance' have been used interchangeably in past research to describe aspects of students' academic abilities. For the purposes of the present study, the term academic performance and academic achievement have been used interchangeably to refer to students' academic abilities as measured by their academic grade, parents' rating and teachers' rating. Similarly, in the study on the self-concept, more emphasis is given on the academic self-concept.

Impact of 'Sex' on Intelligence, Creativity and Academic Performance

The descriptive statistics revealed that females are more likely to be enrolled in private school. The analyses of covariance also revealed that females obtained higher scores than males on the working memory index and that they are higher on the academic grade, whereas, the reversed was observed on imagination. The SEM revealed being male to indicate higher imagination and being female to indicate higher overall intelligence, a latent variable in the model. These findings are in partly in support of the first hypothesis set forth for the study. However, the descriptive statistics and the analyses of covariance failed to show any significant instances for the impact of 'sex' and the demographic variables on academic self-concept; the finding in contrast to the first hypothesis set forth for the study.

One finding that is in contrast to the general trend of the Indian society is that, there is higher tendency to enroll females as compared to males in private school. It has been noted that the literature on gender in equalities in education "often treats all aspects of education as disadvantaging women" (Jacobs, 1996). India being a male dominated society plays a major influence to the parents to give educational privilege to their male offspring. However, Extant of researches revealed females to have better grades in school than male, in the 1960s and 1970s (Alexander & Eckland, 1974; Alexander & McDill, 1976; Mickelson, 1989) and this remains true till today from kindergarten through high school and even in colleges (Bae et al., 2000; Perkins et al., 2004; Freeman, 2004).

Despite the economic growth and development in India, the nation still continues to face large gender inequalities in access to education and occupational status. Like children in many Western countries, Indian children are immersed in a society where the lower status of women is normative. Kishor and Gupta (2006) reported that till 2006, only two-third of girls from 6 through 17 years were enrolled in school, as compared to three-fourths of boys. Besides, 41% of women from 14 through 49 years have never been to a school, as compared to 18% of men. Women are about half as likely as their male counterparts to be employed and receive less compensation for comparable work.

The finding of the present study is however in contrast to the general notion of prioritizing the males. In the Mizo society, gender disparity is not so distinct as compared to the mainland, and equal opportunities are usually given to male and female child. As proven time and again in researches, it was maintained that females performed better in academic grades and are more serious in their work (Deary et al., 2007). Similar trend emerged among the young Mizo children in this study; this can be ascribed to as the underlying reason for the tendency of females as compared to males to be enrolled in the private school.

The present research revealed that females as compared to males are found to perform better on working memory index. Working memory subtest comprised of letter-number sequencing, digit span and arithmetic subtests. As defined by Wechsler (2005), working memory is the ability to retain information temporally and process it to generate a result at a certain moment. In support to the present study, researchers (Anastasi, 1982; Hyde, 2005; Monastersky, 2005) had also maintained that females perform better on verbal facility, perception of details, perceptual speed, memory and digit of symbol substitution.

A similar finding was obtained by Lynn and colleagues (2005a&b) in which female students scored higher than male in digit span and arithmetic with a non-significant difference in mean scores. In addition, males and females obtained the highest scores in the digit Span, followed by letter numbers sequencing and the lowest in arithmetic. In a more recent research, Ariffina and colleagues (2010) maintained that overall; there were significant differences in mean scores of male and female students in PRI and WMI in which female students obtained higher mean scores than male in all of the constructs of WMI. Results showed that female students have higher intellectual ability than male in PRI and WMI. This situation shows that girls are better in making perceptual reasoning, organizing information, mental control and maintaining concentration. Contrary finding have also been reported by researchers (Goldbeck et al., 2010), who claimed that there was no significant difference in

mean standard scores of male and female in digit span and letter numbers sequencing and that males scored higher on PRI as compared to females.

The finding that females obtained higher grade finds corroborative evidences from previous studies. Lao (1980) reported that female students obtained higher CGPA compared to males at pre-collegiate level. Kimball (1989) also found that in contrast to standardized measures of mathematics achievement tests like SAT-M3, female students' outperformed males in math classes. Further, Wilberg and Lynn (1999) also reported that females are better than males in history tests. Similarly, Younger, Warrington and Williams (1999) found that female got better grades in GCSE examinations in the UK. More recently, Nori (2002) found academic achievement to be better in girls than in boys. Similarly, Deary and colleagues (2007) also found that except for physics, females performed better on overall academic subjects.

Researchers have argued that females receive higher grades than males because they work harder, more conscientiously and attend classes more frequently; they have better study skills and more effective learning strategies than the male students. Besides, they also tend to have better language abilities including essay writing skills, vocabulary and word fluency which contribute to better course work (Wainer & Steinberg, 1992; Leonard & Jiang, 1999). It may however be noted that the participants in the empirical researches highlighted are older students; however, the trend seems to have set in even at younger age as disclosed by the present research.

Males on the other hand are found to show greater scores on imagination than females in the present study; the finding in contrast to the first hypothesis. Supporting literature on the higher scores in imagination construct for males could not be found while reviewing the literature. However many researchers reported that there are gender differences in other aspects of creativity. Ai (1999) maintained that flexibility was more prominent in males while elaboration and fluency are more prominent in females, when viewed in relation to their academic performance. Jiliang and Baoguo (2007) found no sex differences on fluency or flexibility, but on originality, wherein males significantly outperformed females.

Torrance and Aliotti (1969) also reported that while girls were found to excel in all of the verbal tests and in the figural elaboration test, boys were superior to girls in figural originality and flexibility in a sample of 10 year old Wisconsin children. They interpreted this finding to be resulting from greater socio-cultural encouragement for boys to be original and divergent with nonverbal concepts and relatively greater social pressures for girls to develop skills that require verbal reinforcement.

In a study with younger students prior to grade three, researchers (Kogan, 1974; Tegano & Moran, 1989) reportedly found the tendency for girls to score higher than boys on fluency and imagination, but in originality boys scored higher. Stephens, Karnes and Whorton (2001) in their study on sex differences in creativity among third and fourth grade American Indian showed that girls obtained higher scores than boys across all subtests with significant differences in originality and creative index scores. This finding emerged to be consistent with the outcomes reported by other researchers (Coone, 1969; Warren & Luria, 1972; Kogan, 1974; Flaherty, 1992; Boling & Boling, 1993; Dudek, Stobel & Runco, 1993).

The difference in the creative ability between males and females may have its root in the socio-cultural milieu. According to Block (1976), in the traditional society females are encouraged to conform, whereas males are expected to be active and dominant risk-takers. Similarly, even at home and in the schools, gender difference is observed in the way they are treated, even the toys provided to them differ. While boys are provided with toys that enhance their visual-spatial abilities, such as trucks, legos, and models (Davis & Rimm, 1989) girls' play are often highly structured requiring turn-taking and rules (Lever, 1976). In view of the foregoing research findings and the significant heterogeneity of variance in the statistical analyses, the dominance of males over females on imagination remains reserved as the socio-cultural characteristics of the participants in the present study.

On examining the effects of sex towards academic self-concept, the present research did not find significant difference between male and females on the academic self-concept. Similarly, researchers (Gabriel & Gardner, 1999; Hossaini, 2002) also maintained that gender does not influence self-concept and self-concept does not influence academic achievement in any way. Marsh and colleague (Marsh et al., 1985; Marsh, 1989) also documented an absence of the effect of sex and grade by sex interaction on general school self-concept of early to middle adolescents.

Contrary to the present findings, many researchers had reported their observation of sex differences in different areas: Males are more confident in their own capacities and evaluation of their own academic abilities than female (Ireson & Hallam, 2001; Wigfield et al., 2001; SarAbadani-Tafreshi, 2006) as well as in the academic effort and academic achievement (Matovu, 2012). Some researchers also found males to be better in the mathematics, science subjects and in the physical domain (Skaalvik & Rankin, 1994; Agwagah & Harbor-peters, 1994; Funk & Bachman, 1996). Whereas, female are reported to have higher verbal and school self-concepts on non-science courses like language (Joffe & Foxman, 1988; Marsh, 1989; Marsh & Yeung, 1998; Harter, 1999; Wilgenbusch & Merrell,

1999). Female students are also reported to have significantly lower self-concept than males with respect to mathematics related and other traditionally male dominated subjects including computer (Busch, 1995).

From the findings of previous researches, it can be deduced that males are found to better in originality (the ability to produce ideas that are unusual) and flexibility (the ability to produce a large variety of ideas) than female which are components of divergent thinking which is more or less similar to imagination. Whereas, females are found to be better in fluency (the ability to produce a large number of ideas) and elaboration (the ability to develop, embellish, or fill out an idea).

Impact of 'School' on Intelligence and Academic Performance

The analyses of covariance revealed small impact of 'School' on WMI and academic grade, wherein participants from private school perform better than those from government school. The descriptive statistics also revealed better performance for the participants from private as compared to those from government school on PRI and WMI subtests of intelligence and the parents' rating and academic grade. These findings are in support of the second hypothesis set forth for the study.

In addition, there are findings in support of the fourth hypothesis of the present study. Parents with higher educational qualification, mothers' with higher occupation and family with higher income are more likely to enroll their children into private schools, whereas, participants with more number of siblings and higher birth order are more often enrolled in government schools. The SEM revealed fathers with higher educational qualification are more likely to enroll their children in private school. Besides, the SEM also revealed enrollment in the private school to indicate greater scores on intelligence and academic grade, the former being a latent variable in the model. The study failed to show any significant instances for the impact of 'School' on creativity and academic self-concept, a finding in contrast to the second hypothesis of the present study.

Different researchers (Considine & Zappala, 2002; Kwesiga, 2002; Escarce, 2003; Sentamu, 2003) argued that students from high income family are likely to perform better in their academic performance due to the fact that they attended those high-class schools and are well exposed to scholastic materials, which aid their intelligence. This tendency was put forward by Combs (1985), who opined that in virtually all nations, children of parents with high socio-economic status have far better chance of getting into good secondary schools and

from there into the best colleges and universities than equally bright children of ordinary workers or farmers.

Families with high socio-economic status are also often more successful in preparing their young children for school because of access they enjoy to harness resources responsible to promote and support young children's development they are able to provide their young children with necessary education requirements and equipment (Anderson & Sullivan, 1993). On the other hand low-income students usually attend schools with lower funding levels, have reduced achievement motivation and much higher risk of educational failure. When compared with their more affluent counterparts, low-income adolescents receive lower grades, earn lower scores on standardized test and are much more likely to drop out of school.

The better performance of private schools as compared to government schools on WMI and PRI and private schools portraying better academic grade that has emerged in the present study follows the trend which is evident from the surveys report in a number of developing countries including India (Kingdon, 1996a; Tooley & Dixon, 2006; Andrabi et al., 2007). These survey reports revealed that learning outcomes in private schools, as measured by test scores, are on average better than government schools. Of the many cognitive factors, working memory has been considered to be most highly related to learning and the best predictor of academic success (Kyllonen, 1996; Kane & Engle, 2000 & 2002; Dehn, 2008).

As private schools emerged to be better on WMI as compared to government schools, their academic grade has also emerged to be better. Since the performance of private schools are usually better, it has also been found that parents who are educated and who are from the average and higher income group enroll their children in the private schools. Likewise, in Mizoram, even though the government is providing free education, with free uniforms and free textbooks, free midday meal to the students up to the elementary stage in the government schools, according to the latest report made by the statistical wing of the Directorate of school Education, 47.14% of the elementary stage students are still enrolled in the purely private schools (Directorate of School Education, 2015).

There is a general agreement that the type of school a student attends is likely to be related to the level of intelligence of the student that later contribute to the academic performance of the student. Some researchers (Crosnoe, Johnson & Elder, 2004) posited that school ownership and funding have an effect on performance of the student. School owned by private individuals and those owned by the government happens to be an important structural component of the school. Even in the place where the present study is being conducted, the two types of management schools -purely private owned schools and those owned and

managed by the government, have significant difference in terms of infrastructure, enrollment and academic performance.

In private schools, heavy fees are imposed that makes admission attainable for the high or at least average income group of families only. Sampson (2004) also noted that private schools have alternate sources of funding, higher level of discipline, and are very selective and this is why they tend to have higher academic achievement than students from public schools. Therefore, private schools are more likely to have a greater number of students from high socio-economic status families and are likely to select students with stronger abilities and have greater financial resources (Crosnoe, Johnson & Elder, 2004; Sampson, 2004).

Like the other parts of India, private schools are normally an English medium school in Mizoram, where the management is solely in the hand of the owner of the school. The financial sources are mostly from the fees paid by the students out of which the salaries are paid to the teachers, which is usually much less than the teachers of the government schools. The maintenance of the schools including infrastructure, furniture, equipment, library, teaching learning materials and other basic amenities are met from the school tuition fees. So in order to meet the necessary expenditure, heavy tuition fees are levied from the parents for their children's education, such being the case, only the children from average or high socio-economic status children can have access to the private schools.

Despite the fact that, while children can avail free education including uniforms and textbooks from the government schools up to elementary stage, parents who can barely afford private schools still wants to send their children to private schools. Parents value good quality education and English is given high priority, in order to attain that, parents are willing to pay for it. It is true that most of the teachers in the private schools are untrained and the salary meager, parents still perceive private schools to be more accountable and perceived them to offer better quality education. Therefore the preference is still with the private schools.

The expectations and ratings of the academic performance of their children by the parents' have also been found to have a positive effect on the children's performances (Steinberg et al., 1992; Eccles, 1993; Singh et al., 1995; Wang & Wildman, 1995 Frome & Eccles, 1998). Parental expectations are based on an assessment of the child's academic capabilities as well as the available resources for supporting a given level of achievement. Students whose parents hold high expectations have been found to receive higher grades, achieve higher scores on standardized tests, and persist longer in school than do those whose

parents hold relatively low expectations (Davis-Kean, 2005; Pearce, 2006; Vartanian et al., 2007).

High parental expectations have also been found to motivate students to achieve in school and aspirations to attend college (Hossler & Stage, 1992; Peng & Wright, 1994; Reynolds, 1998). However, Alexander and colleagues (1994) suggested that the parents' abilities to form accurate beliefs and expectations regarding their children's performance are essential in structuring the home and educational environment so that they can excel in post schooling endeavours.

Christenson and colleagues (1997) stated that the variables related to parental attitudes and behaviour are more important in improving academic results than social class or the family make-up. According to these authors, it is these variables, through which parents transmit positive educational experiences to their children, which differentiate between students with high and low academic achievement. Deslandes, Potvin and Leclerc (1999) also concluded that parental variables (parental style and parental involvement dimensions) are stronger predictors of school achievement than family characteristics.

The impact of parents' educational qualification and mothers' high occupational status on their children has been exposed in the descriptive statistic. Parents with high educational qualifications (EQ) are found to earn more, and therefore are more likely to send their children to private schools. Similarly mothers with high occupational status are likely to earn more and therefore are more likely to enroll their children into private schools. The overall total effect of parents' educational attainment on child achievement is much stronger than the total effect of income. Mahale (1978) stated that highly educated people have better earning capacity and people with higher income can afford better education for their offspring. Economically deprived people with or without education, find it hard to give their children good education and children may be obliged to leave school early to support their family. Parents with a good education background view the importance of success in the examination with a good percentage of marks with a perspective of higher education.

Supporting Mahale (1978), the present research also revealed that parents (both father and mother) with higher education are found to have higher occupation with higher income, which placed them in a better position to be able to provide for their children's education. As shown earlier, private schools are better choice not only in India but across the world also for the basic fact that the private schools often are found to outperform the government schools academically. Parents who can barely afford are also found to enroll their children in the private schools, for want of better education and for English language proficiency.

However, since admissions in private schools are expensive, it is not possible for the low income families to meet the required expenditure, so they mostly has to resort to admit their children into a government owned school where education is offered free of cost. The study further revealed that participants with more number of siblings and higher birth order show tendency to be enrolled in government schools which may be in consonance to the dilution model (Blake, 1981; Downey, 1995). However, since it is the fundamental right of a child below 14 years of age to receive free and compulsory education (Article 21A of the constitution, 86th Amendment Act, 2002 and The Right of Children to free and compulsory Education Act, 2009), all children in the government schools are provided free uniforms and textbooks along with midday meal which enabled many low income parents to give education to their children.

The finding of the present study that revealed that children with more number of siblings and high birth order are more likely to be enrolled in government school as compared to private schools has also been found to be related to various other factors like low income and lower education qualification of their parents. Since education in the government schools is free, parents who are financially low have no option but to enroll their children to government schools. In support to this, other researchers also reported the impact that large *sibship size* that included decrease in funding by parents for further education (Steelman & Powell, 1989 & 1991), less time with their parents (Hill & Stafford, 1974), less parental encouragement (Blake, 1981) and less motivation for school work (Marjoribanks & Walberg, 1975). These prominent relationships between the variables under study are apparently operating in the families of the present participants.

Impact of the Interaction of 'Sex x School' on Perceptual Reasoning Index

Another finding that emerged from the present study is that females in government schools emerged to score significantly lower in perceptual reasoning index (PRI) than all the other three comparable groups; a finding in contrast to the third hypothesis of the study. PRI measures the students' visual perception, reasoning, organizing and creating visual and non-verbal material to solve non routine problems (Glass et al., 2008; Largotta, 2009). The subtest includes block design (which assess the students' ability on problem solving, space perception and visual processing), picture concept (which tests respondent's logic or sequential reasoning and social intelligence) and matrix reasoning (which is used to assess students' skills in problem solving and non-verbal abstract reasoning).

Previous researches have revealed that those who are in the lower socio-economic status tend to enroll their children in the government schools and the same trend is also found

in the present research. Literature reviewed revealed that poverty and parent's socio-economic status have been linked as possible reasons for school mobility and academic performance of children (Alexander et al., 1996; Mehana, 1997; Temple & Reynolds, 1999).

Researchers (King and Bellow 1989; Graetz 1995; Owens, 1999; Considine and Zappala (2002), 2006; Hansen & Mastekaasa, 2006) also opined that socio-economic background remains one of the major sources of educational inequality and adds that one's educational success depends very strongly on the socio-economic status of one's parents. Children from families with low income are more likely to exhibit lower levels of literacy, lower retention rates, higher levels of problematic school behaviour and are also more likely to have difficulties with their studies and display negative attitudes to school; whereas children from high socio-economic status families are reported to perform much better at school compared to children from low socio-economic status families. It is believed that low socio-economic status negatively affects academic achievement because it prevents access to vital resources and additional stress is created at home (Jeynes, 2002; Eamon, 2005).

Researchers (Duncan and colleagues, 1994; Ramey & Ramey, 1994) pointed out that children from the low socio-economic status families living in poverty face the challenges of inadequate housing, healthcare and other basic necessities for their development. They also lack access to educational learning tools such as learning toys and games which limits the achievement potential of students. Sometimes, when basic necessities are lacking, parents must place top priority on housing, food, clothing and health care. Educational toys, games and books may appear to be luxuries and parents may not have the time, energy, or knowledge to find innovative and less-expensive ways to foster young children's development. Memon, and colleagues (2010) added that parents can rather be burdened with inadequate or limited access to resources that is needed to promote and support children's development and school readiness.

It may therefore be considered that, these female children who are enrolled in the government schools belongs to the lower socio-economic status family, and as revealed in this study, parents of low educational qualifications, low income and those with large *sibsize* are enrolled into government schools basically because education in government schools are free. In low socio-economic status families it is not unusual that priority is not given to the school work. Parents usually need their children specially the females to help their mothers do household chores or to look after their younger siblings. Uneducated parents usually are unable to help their children in the school work; besides due to pressure of work and sometimes ignorance, they are unable to spare their time with their children with little or no

motivation. These factors can be supplemented by the lack of educational learning tools or toys to enhance the intellectual thinking, and the perceptual reasoning capability could receive a setback in the children's intelligence.

Perceptual reasoning requires abstract concepts, rules, generalizations and logical reasoning and solving non routine problems. The children, especially the very young children may still have developmental problems in these areas. Empirical researches had also pointed out male dominance over gross motor skills, spatial orientation, visio-spatial tasks, mechanical aptitude, logical-mathematics and matrix reasoning (Anastasi, 1982; Hyde, 2005; Monastersky, 2005; Sophie et al., 2006). These findings provided corroborative evidence that supported and justified as to why females were found to score lower than males in perceptual reasoning in the present study.

Impact of Age on Intelligence and Creativity

The outcomes of the present study, based on the effect sizes, revealed that with the increase in age, the performance of the children got better on both the subtests of intelligence. The outcome is more strongly observed on the working memory index and slightly on perceptual reasoning index. Similarly, a slight increase on fluency and originality emerges with increasing age. The SEM revealed the older participants to show higher intelligence and creativity, whereas, the younger participants emerged to show better academic performance. These findings are in support of the fourth hypothesis of the present study.

Developmental researchers (Dempster, 1981; Hale, 1990; Kail, 1991a&b) proposed that as children mature, their information processing becomes faster, their short-term memory capacity increases; and, of course, their ability to reason improves (Wechsler, 1981; Court & Raven, 1982; January et al., 2015). It may be mentioned again that the age group of participants under study is between 6 to 8 years labelled as middle childhood, spanning from the latter part of pre-operational stage and early part of the concrete operational stage as propagated by Piaget (1975).

Piaget (1975) had advocated that in the pre-operational stage, children do not yet understand concrete logic and cannot mentally manipulate information. Younger children use symbolic play and pretending takes place in this stage. Their thinking remains inflexible, illogical and fragmented and their thinking still remains egocentric. The pre-operational stage is sparse and logically inadequate in regard to mental operations and the children are not in position to perform operations, which composed of tasks that the children are required to do mentally, rather than physically.

Piaget (1975) further stated that, as the child reaches the concrete operational stage, the changes in the cognitive level is characterized by the appropriate use of logic. Their thought processes had become more mature and they are able to solve problems that apply to concrete events or objects in a more logical fashion. However they are still unable to deal with problems requiring abstract thinking yet. At this stage, the children undergo a transition where the child learns rules such as conservation, inductive reasoning and generalization. Therefore, the intellectual ability of children is bound to improve as age increases which are especially distinct in young children who are undergoing physical, mental and intellectual changes. The present findings confirm what has been proposed by Piaget (1975) that, as the age increases their intellectual ability got better.

Fry and Hale (2000) claimed that, ever since the first test of children's intelligence was developed it has been known that as children grow older their raw scores on intelligence tests improved. They authenticated their report based on the data taken from standard progressive matrices (Raven et al., 1983) which clearly showed that age-related improvements in intelligent performance are nonlinear during the school years and early adulthood.

In addition, researchers (Horn & Cattell, 1967; Knox, 1977; McArdle et al., 2002) reported that fluid intelligence advances rapidly in early and middle childhood, continues to increase though at a slower rate until early adolescence and reaches asymptotic values in the mid-adolescence to late-adolescence stage, after which it begins to decline. The same advancement in the middle childhood years is evinced by the perceptual reasoning and organization in the findings of the present study.

The developmental and progressive improvement of memory has also been recognized by Dempster (1981). In his meta-analysis of the development of memory span, he pointed out that, memory spans of the average preschool-age child is approximately one-third that of the average young adult. He further showed that most of the developmental improvement in memory span occurs during the early school years. Thus, he posited that there is a definite nonlinear relationship between memory span and age.

Gathercole and Baddeley (1993) in their review of literature on the development of working memory also concluded that the increase in children's memory ability with age is based on increases in the efficiency of the working memory system. They pointed out that improvement in working memory appears to be purely quantitative beyond the age of 6 years, but reported that, some evidence suggests qualitative changes in working memory may function prior to entering the first grade. In particular, under certain circumstances younger

children prefer to use different mnemonic strategies than older children (Hitch & Halliday, 1983; Hitch et al., 1988). The foregoing research findings clearly supported the finding of the present research that the intellectual development of the children gradually got better as the age increases.

The present research also reported a slight increase in fluency and originality as the children became older (Kirsch, Lubart & Houssemand, 2016). Theories of child development view young children as highly creative, with a natural tendency to fantasies, experiment and exploration of their environment; which however may not be maintained throughout childhood and into adulthood. Runco (1999) suggested that creativity may either develop gradually as the individual matures and gains life experience or may develop in stages with peaks and slumps found over time.

Contrasting to the finding in the present study, Torrance (1968) maintained that student's creativity began to decline around age 6, slumped further in the fourth grade, but later showed a subsequent increase. Torrance (1968) speculated that the slump was due initially to the need to conform to the classroom expectations for the first few years as a child enters school. He further suggested that, the addition of peer pressure in the fourth grade resulted in an even greater need to conform that discouraged students to display creative abilities.

Supporting Torrance (1968), Meador (1992) presents evidence that creativity (as indicated by divergent thinking tests) declines when children enter kindergarten, at around the age of five or six. In Mizoram, children are mostly enrolled in kindergarten in private English medium school at the ages 4 or 5, or even younger. For those not enrolled, there is an opportunity to attend the anganwadi centres. So basically when a child reaches the age of 6, they have had the opportunity of interaction with their peers for at least a year or two.

Smith and Carlsson (1983, 1985 & 1990) claimed that generally the preschool child (4 to 5 year old) cannot be creative since the world of outside stimulation and inside representation is not yet fully differentiated. They posited that the first traces of true creativity appear around five to six years of age and after the first creative phase a slight decline in creativity appears after entering school. A slump in creativity occurred at ages 7 to 8, with a creative peak at 10 to 11 years old. Creativity then decline again at 12 years of age but did not fall as low as that found at ages 7 and 8. After age 12, a gradual but steady rise in creativity occurred through the rest of adolescence until a second peak was reached around 16 years of age. They concluded that the first true stage of creativity occurs at 10 to11 years of age.

The occurrence of developmental changes in young children as the age increases is nevertheless observed. In a study, Mouchiroud and Lubart (2002) assessed children between the age of 6 to 11 year old for their social creativity through interviews, during which the participants were made to imagine original solutions to interpersonal problems. The results suggested that since older children have more social experiences and have more access to efficient search processes than younger children, they proposed more solutions to social problems. Research done by McGhee (1997) within the age group of 5 to 14 year old children on problem solving also suggested that the ability to guess, check, improve on a solution, simplify a problem and use logical reasoning, were mastered by the age of 7. However, some skills, including using processes of elimination and forming structured questions, were not competently and collectively mastered until the age of 10 (McGhee, 1997).

Gardner (1982) believed that creativity started at a younger age. He proposed that preschool children have high levels of creative ability and expressive artistic creativity. Gardner (1982) agreed with the idea that artistic development followed a U-shaped pattern as children develop. He suggested that as children began school, they entered into a literal stage of development where they learned conformity. At this point in development, children's artistic creativity appeared to decline. He also indicated that creativity began to increase at pre-adolescence and continued through adulthood.

Contrary to the above claims, the present research finds that the children's creativity progress as their age increases. The older children were found to be better in fluency and originality than the younger children. In view of the findings highlighted above, that creativity from various researches is not a static construct but develops at a certain period, slumps again due to certain reasons and recovers again when a child reaches a certain age. It may be stipulated that in the Mizo society, the level of developmental maturity may have occurred on or before 5 to 6 years of age, as proposed by Smith and Carlsson (1983, 1985 & 1990), and the slump may have already occurred since the participants are between 6 to 8 years old. The slump, if present, may not have become evident during the particular age under study.

Impact of Family Status on Intelligence, Creativity and Academic Performances

The present study under the umbrella of family status focused on the number of siblings or *'sibship'*, birth order and family size. The descriptive statistics of the variables under 'family status' revealed: positive relationships between number of siblings, birth order and family size; number of siblings and birth order to be negatively related to fathers' and mothers' educational qualification; and number of siblings to be negatively related to mothers

occupational status. Besides, the descriptive statistics also revealed that with more number of siblings in the family there is a tendency that they will obtain lower scores in working memory, imagination and academic grade and that mothers' with higher occupational status bears less number of children.

The analyses of covariance also revealed that the more number of siblings, the lower the scores on originality and imagination. Similarly, these children with higher birth order are more likely to obtain lower scores on working memory and academic grade. In terms of family size, the descriptive statistics also revealed larger family size to indicate greater scores on fluency and more income; and the analyses of covariance revealed participants from larger family size to show greater mean scores on fluency and originality. The SEM revealed larger family size indicated higher overall creativity; a latent variable in the model. These findings are again in support of the fourth hypothesis. However, the significant impact of the family status (number of siblings, birth order and family size) failed to emerge on the academic self-concept of the participants; a finding in contrast to the fourth hypothesis.

Baer and Kaufman (2005a) in their study to examine the moderating effects of sibling constellation variables (i.e., sibling age and sex differences, and *sibsize*) on the relation between an individual's birth order and his or her creativity showed that the creativity of first born with many siblings suffered as sibling age differences increases but was enhanced by an increase in sibling sex differences. Thus, growing up with a large group of opposite-sex siblings or with a large group of siblings relatively close in age seems to positively affect the creativity.

There are various studies that looked into the inverse relationship between the number of siblings and educational outcomes (Heuyer et al., 1950; Gille et al., 1954; Breland, 1974). The present research has also revealed that as the number of siblings increases their scores on the working memory is lower which supported the many findings established earlier. Several researchers have come up with the findings that children with large numbers of siblings have lower IQ than children in small families (Thomson, 1949; Blau & Duncan, 1967; Featherman & Hauser, 1978; Bouchard, 1993; Lynn, 1996). Researchers (Zajonc & Markus, 1975; Zajonc, 1976 & 1983; Bjerkedal et al., 2007) also reported that compared to children with one sibling, children with several siblings scored lower on tests of intellectual abilities. They articulated that the more children in the family, the less will be the stimulating the intellectual environment. In a large number of siblings, a child receive progressively less attention from the parents, and IQs decline steadily with birth order thus resulting as *sibship* size increases, performance in academic grade tends to decline.

Other impact of large *sibsize* professed by researchers include decrease in funding by parents for further education (Steelman & Powell, 1989 & 1991); likelihood of undertaking other course of interest (Blake, 1989); less time with their parents, (Hill & Stafford, 1974); less parental encouragement (Blake, 1981), less likely to recall being read to as a preschooler (Blake, 1989), and less motivation for school work (Marjoribanks & Walberg, 1975). The accumulation of all these factors may be attributed to the low academic performance of children.

Blake (1989) after analyzing nearly every national data set available at the time in her study on family size and achievement reported that as *sibship* size increases, performance on academic grade declines. According to her, children from large families do less well in school than their counterparts from small families because large families are disproportionately from lower socio-economic groups. She further reported that across data sets, fathers' education was the only other variable in the status attainment model that consistently had a stronger effect than *sibship* size on educational attainment.

Another explanation on the effects of *sibship* size on educational performance is offered by the resource dilution model advanced by Blake (1981 & 1989) and Downey (1995). Beginning with the assumption that parental resources are finite, the model posited that as the number of children in the family increases, the proportion of parental resources accrued by any one child decreases. According to researchers (Blake, 1981; Teachman, 1987; Downey, 1995) the finite parental resources (types of homes, place to study, necessities of life, cultural objects - like books, pictures, music and so on), personal attention, intervention and teaching have to be divided among the siblings. Besides, with more number of children, parents are likely to enroll their children in government schools where education is given free of cost. If the *sibship size* is more, the more the resources have to be divided which results in lowering of the quality of the output.

Researchers (Ernst & Angst, 1983) also maintained that the inverse relationship between large *sibship size* and educational performance is artefactual and posited that it is actually the function of socio-economic status. They argued that children from large families tend to do less well in school than their counterparts from small families, because large families are disproportionately from lower socio-economic groups.

The descriptive statistic shows that more number of sibling resulted in less imagination and the analyses of covariance also revealed that with more number of siblings there is a decrease in their originality and imagination. The present study supported the findings of Zajonc and Markus (1975) while it remains in contrast to others (Runco &

Bahleda, 1986) who reported that children having several siblings scored higher on verbal divergent thinking tests than only children.

It may be worthwhile to highlight that, the present subtests of imagination and originality utilized to measure creativity is basically projected through pretend play. Pretend play has been conceptualized as an arena for the expression of creativity and for the facilitation of creative processes and it involves the use of fantasy and symbolism (Fein, 1987; Russ, 1993; Singer & Singer, 1990). It involves divergent thinking, which is one of the major cognitive processes important in creativity. The present tool used is to facilitate divergent thinking, because in play children practice divergent thinking skills by using toys and objects to represent different things and by role-playing different scenarios (Singer & Singer, 1990).

Originality and imagination needs divergent thinking which according to Guilford (1968) generates a variety of ideas and associations to a problem. Divergent thinking involves free association, broad scanning ability and fluidity of thinking, and has been found to be relatively independent of intelligence (Runco, 1991). The present research revealed that children who are with more siblings appear to be weak in divergent thinking as is manifested in the decline in the imagination and originality score.

The finding of this research that children with higher birth order earn lower academic grade and lower score on the working memory has also been reported by Belmont and Marolla (1973). They suggested that intelligence decline in children with increasing birth order and family size. Kristensen and Bjerkedal (2007) also reported that older siblings have higher intelligence test scores than younger siblings in their analysis of over two lakhs of Norwegian 18 and 19 year olds.

Lynn (1959) further opined that parents give more attention to children in small families, and to first born and last born (as compared with intermediates), and this enhances the children's intelligence. The child's IQ is partly determined by the attention given by the parents and siblings, the smaller the number of children in the family, the greater the amount of attention from their parents. Since each child receive progressively less attention from the parents, and IQs decline steadily with birth order thus resulting in children from small families to have higher average IQs (Zajonc, 1976 & 1983).

Contrary to that, Hausel and Sewell (1983) investigated the effects of birth order on educational attainment for each *sibship* size, while controlling for age and various characteristics of the parents. Although *sibship* size had an important effect, they concluded

that among persons with the same sibship size, birth order itself had no statistically significant effect on educational attainment.

Rodgers (1984 & 2001) and his colleagues (Rodgers & Rowe, 1994; Rodgers et al., 2000, Wichman et al., 2006; Khalek & Lynn, 2008) also conceded that family size and birth-order have no causal effects on intelligence. They argued that within-family data do not show the relationships between family size and birth-order on intelligence that is present in the between-family data used by the researchers (Blake, 1981; Downey, 1995). This finding has been supported by Abdel-Khalek and Lynn (2008) who reported that, the notion that children in larger families tend to have lower IQs and the birth-order effect that early born children tend to have higher IQs than later born children does not appear in their study among the Kuwait children. The whole result indicated that there is no association between family position and IQ which suggested that the amount of attention that children receive from their parents and older siblings has no significant effect on the children's intelligence.

In the descriptive statistic, the outcome shows that children from large families scored higher in fluency and the analyses of covariance also revealed that as the family size increases there is increase in the score in fluency and originality. It may be recalled that Torrance (1969 & 1974) had described fluency as the ability to produce a large number of ideas and originality as the ability to conceive ideas that are unusual, statistically infrequent, not banal or obvious.

According to Nwosu (2004), creativity cannot be created but it can be nurtured or cultivated as it can also be destroyed. Children from large families have more opportunity to interact with others, more space to share views and more opportunity to play with siblings which nurture their environment. Therefore, with more experience, more interaction with others and more exposure it is possible that children are less inhibited and more independent which enhanced their abilities to conceive novel ideas which helps them to exhibit more fluency and originality.

Zajonc and Markus (1975) also suggested that intellectual development benefits from the presence of other siblings close in age. Siblings of the same age group tend to conform to each other as they play and interact with each other. They also reported that with larger sibling, creativity increased with closely spaced siblings. In the Mizo culture, family are usually not very small, it is common that grandparents and unmarried brothers and sisters stay with the family, and the number of siblings ranges from two to six or seven and the spacing of child bearing is normally close as indicated in the findings of researchers (Zajonc & Markus,

1975; Baer & Kaufman, 2005b). These factors are believed to enhance the fluency and originality of the participants under study.

Another finding of the present study is that larger families have better income. It becomes obvious that when there are more number of adult earning members in the family, their income will certainly be more. As stated in the foregoing paragraph, there are many joint families (i.e., families living with their grandparents and other brothers or sisters) in Mizoram. It may be stipulated that most of the parents of the participants are young parents living with their own parents at this juncture.

Impact of Socio-economic Status on Intelligence and Academic Grade

Socio-economic status (SES) is most commonly determined by various researchers by combining parents' educational level, occupational status and income level (Duncan et al., 1972; Hauser, 1994; McMillan & Western, 2000; Jeynes, 2002). According to Considine and Zappala (2002), socio-economic status is a person's overall social position to which attainments in both the social and economic domain contribute. Following previous studies, the following variables: parents' income, parents' education and parents' occupation are studied in this research under one umbrella of social economic status (SES).

Traditionally, socio-economic status and parents' level of education have been regarded as predictors of children's academic achievement. Rothman (2004) posited that, the most important factor associated with the educational achievement of children is not race, ethnicity or immigrant status. Instead, the most critical factors appear to be the socio-economic factors. Joan and Smrekar (2009) suggested rather than having a direct association with children's academic achievement, socio-economic status and parents' level of education is part of a larger constellation of psychological and sociological variables influencing children's school outcomes. Researchers (Domhoff, 1998; Hanes, 2008) even proposed that the higher level of parental socio-economic status is a powerful predictor of children's academic performance.

The descriptive statistics of the present study shows that fathers' educational qualification and mothers' educational qualification are positively related. Fathers' educational qualification and mothers' educational qualification are also found to be positively related with mothers' occupational status, family income, their perceptual reasoning index, working memory index and parents' rating. Fathers' educational qualification is also found to be positively related to teachers' rating and academic grade. The higher fathers' occupational status indicates lower mothers' occupational status and that

mothers' higher occupational status also indicated higher family income and parents' rating. Lower family income was found to indicate higher mothers' religious involvement and higher family income indicated higher PRI, WMI and Parents' rating.

The analyses of covariance revealed fathers' educational qualification to indicate greater scores on PRI, WMI and parents' rating and the family income also indicated greater scores on PRI. The SEM also revealed higher fathers' educational qualification to indicate higher overall intelligence, a latent variable in the model. These findings are in support of the fourth hypothesis set forth for the present study. However, no significant impact of socio-economic status emerges on creativity subtests and academic self-concept; the contrasting findings against the fourth hypothesis.

The descriptive statistics had revealed that fathers' educational qualification and mothers' educational qualification are positively related and that parents' with higher educational qualification are found with higher income; which is an indication that parents' with higher educational qualification hold higher occupational status. The study had also revealed that fathers' with higher occupation are likely to be with mothers' with lower occupation and it had also shown that fathers with high educational status are more likely to be married to mothers with high educational qualification. Therefore it may be well to deduce that both parents with high education and having relatively secure income are likely to choose mothers to be at home to look after the children and the household.

Education has been known to be closely related to cognitive ability, in terms of both personal education and parental education. The present study also found that children of high educational qualification parents performed better in the PRI and WMI subsets and they also exhibit better academic grade indicating that they are more intelligent as compared to children of lower educational qualification fathers. Parent with higher education qualification are also found to rate their children better as compared to low educated parents. The analyses of covariance also revealed that the children of high educational qualification fathers scores higher in PRI and WMI. The findings have been substantiated by several previous research findings.

Different researchers (Klebanov et al., 1994; Haveman & Wolfe, 1995; Smith et al., 1997) have established that there is a significant positive influence of both parents' educational level on the children's academic performance. Parental education has been considered one of the most stable aspects of socio-economic status because it is typically established at an early age and tends to remain constant (Hauser & Warren, 1997). Moreover,

parental education is an indicator of parent's income because income and education are highly correlated.

Researchers (Onocha, 1985; King & Bellow, 1989; Musgrave, 2000; and Grissmer, 2003) had even posited the educational attainment of the child's parents to be probably the most important factor in determining the child's educational opportunities. They observed that the higher the attainment for parents, then the greater their aspirations for children. Taiwo (1993) submitted that parents' educational background influence the academic performance of students since parents could be a second teacher and are capable to guide and counsel their child to perform well in education besides they will also be able to provide the necessary materials needed by the child.

Nannyonjo (2007) had also reported the impact that parents' educational qualification has on the children. He stated that students from the educated parents who had attended and finished senior four or senior six or university performed considerably better than the students with parents who did not finish primary or just finished primary school. Students whose fathers have university degree are likely to be expected to have the highest increase in test score. Supporting this, Musgrave (2000) also claimed that children that came from an educated home would like to follow the steps of their family and for that; they work actively in their studies. He further said that parents who have more than a minimum level of education are expected to have a favoured attitude to the child's education and to encourage and help him or her with school work which shows in their academic performance.

The present finding is also in consonance with the findings of various other researchers. Onocha (1985) concluded that children from well-educated family with high socio-economic status are more likely to perform better than a child from an illiterate family since children from educated family are likely to receive lots of support in a decent and good environment for academic work, receive good guidance from parents with enough textual and academic materials along with decent feeding. Besides they are likely to be enrolled to good schools where well-seasoned teachers handle their subjects.

In a recent study on the impact of parental socio-economic status on students' educational achievements at secondary schools of district Malir, Karachi, researchers (Memon et al., 2010) reported significant relationship between father's level of education and academic performance of a child. They found that majority of children whose parents (both father and mother) were well-educated performed better in matriculation examination as compared to those children whose parents (both fathers and mothers) were less educated or illiterate. Similarly, those children whose parents (both fathers and mothers) enjoyed better

occupational status performed better in the matriculation than those parents (both fathers and mothers) that has lower occupational status.

Contrary to the above claims, Pedrosa and colleagues (2006) in their study on educational and social economic background of undergraduates and academic performance at a Brazilian university found that students coming from disadvantaged socio-economic and educational homes performed relatively better than those coming from higher socio-economic and educational strata. Nagoshi and Johnson (2004) in their study among the 949 Hawaiian families and 400 families of Japanese descent living in Hawaii also indicated that parental education and occupational status do not have a significant influence on their offspring's intelligence and they stated there is no reason to expect a significant correlation between socio-economic status and scholastic achievement. Thienpont and Verleye (2003) also shared the viewpoint and claimed that, social class of origin is a factor of non-importance to account for the relationships among socio-economic status, education, and intelligence and further stated that parental education was not an explaining variable either.

Another interesting finding is that mothers with higher occupational status tend to bear less number of children. The study also found that mothers with higher qualification and higher income reflected higher intelligence of the children. As reported earlier, mothers who have higher educational qualification also have higher occupation.

The trend that emerged in the present study supports the findings of researchers (Lynn, 1996; Lynn & Van Court, 2004) who summarized several studies and claimed that the relation between family size and intelligence is largely due to the tendency of more intelligent couples to have fewer children. They posited that since intelligence is transmitted from parents to children, the magnitude of the correlation between the average IQ of both parents and the IQ of their children being .72. According to Bouchard (1993), the result of this will be that children in small families will have higher average IQs than those from large families.

The importance of education and its link with the home environment and the prioritization of children's education for the higher income family are clearly depicted in the present study. The present study revealed that mothers with higher education qualification have higher occupation and higher income; which holds to the view of Klebanov and colleagues (1994) who claimed that both mothers' education and family income are important predictors of the physical environment and learning experiences in the home for their children, and mothers' education alone was predictive of parental warmth.

Similarly, Smith and colleagues (1997) found that the association of family income and parents' education with children's academic achievement was mediated by the home environment. The mediation effect was found to be even stronger for maternal education than for family income. Corwyn and Bradley (2002) also found that maternal education had the most consistent direct influence on children's cognitive and behavioural outcomes with some indirect influence through a cognitively stimulating home environment.

The present study also revealed that parents who displayed higher ratings of their children are those who possesses higher educational qualification and who have higher income. The finding that mothers who have high occupational status tends to rate their children high, is in support of the findings of Halle and colleagues (1997), who reported that mothers with higher education had higher expectations for their children's academic achievement and that these expectations were related to their children's subsequent achievement in maths and reading.

Parcel and Menaghan (1990) found that mothers who are working and involved in occupations with a variety of tasks and problem solving opportunities provided more warmth and support and a greater number of stimulating materials. Their children manifested more advanced verbal competence, which is consistent with the findings of Kohn and Schooler (1982) that posited that, what parents experience at work, they incorporate into their style of parenting. Parents' educational aspirations were also found to be the most consistent factors affecting the children's education, and this is evidenced in a research conducted on 1,700 husbands and wives in urban and rural areas of Ghana (Cochrane, Mehra & Osheba, 1985).

Akinsanya, Ajayi and Salomi (2011) proposed that next to parents' education, the parents' occupation predicts children's academic achievement in mathematics. Providing empirical evidence they reported that students whose parents belong to the high ranking occupational status might get better grade in mathematics than their counterparts whose parents belong to the low ranking occupational status. They posited that parents with high ranking occupational status have enough income which can be used to provide the needed materials and support for their children in order to arouse their interest in mathematics than their counterparts in low ranking occupation whose major obligation is to provide shelter and food for the family. The finding is supported by many researchers (Jaffe, 1985; Rani, 1998; Dubey, 1999; Simon, 2000; Teese, 2004; Sharma, 2004).

The effective role of financial income on the academic performance has also been propagated by Odebumni (1988) and Egbule (2004), stating that finance is the avenue through which students' bills are paid. If their finances are not adequate, the situation may tend to

affect their academic performance adversely. If, on the other hand, their financial needs are met adequately, probably their academic performance may be enhanced.

Willingham (2012) also maintained that parents with high-SES have more capital and can invest more into lifelong learning opportunities for their children and these (books, computers, educational toys) intellectual stimulations are associated with better academic achievement. Willingham (2012) opines that opportunities for children from high income family can often start even before children go to school which includes higher-quality daycares, seeking housing in what the parents believe to be superior school districts, and intentionally cultivating reading, writing, science, and mathematics skills.

Similarly, the effective role of the financial income of the family in the intelligence of the child has also been revealed in the present study. The children of the higher income family show better performance in the perceptual reasoning and working memory sub-test which was evident in the descriptive statistics. The analyses of covariance also clearly depicted that children from high income family score better in the perceptual reasoning.

Considine and Zappala (2002) in their study on the influence of social and economic disadvantage in the academic performance of school students in Australia also reported that families where the parents are advantaged socially, educationally and economically foster a higher level of achievement in their children. They also stated that high socio-economic families are able to provide their young children with quality of necessary education requirements and equipments. They also mentioned that these parents provide higher levels of psychological support for their children through environment that encourage the development of skills necessary for success at school. Likewise, Memon and colleagues (2010) also reported that a significant relationship was found between family income and monthly expenditure incurred for the students and their academic performance in matriculation. The students whose family income was higher and for whom monthly expenditure for education is more performed better as compared to those students who belonged to low income.

On the other hand, data from the National longitudinal survey of youth and the national household education survey (Bradley et al., 2001a, Corwyn & Bradley, 2002) had also indicated that children from poor families have less access to a wide variety of different recreational and learning materials from infancy through adolescence. They are less likely to go on trips, visit a library or museum, attend a theatrical performance, or be given lessons directed at enhancing their skills. Access to such material and cultural resources mediates the relation between SES (or family income) and children's intellectual and academic

achievement from infancy through adolescence (Bradley, 1994; Entwisle et al., 1994; Brooks-Gunn et al., 1995; Guo & Harris, 2000; Bradley et al., 2001a&b).

Impact of Parents' Religious and Social Involvement

The descriptive statistics revealed that fathers' religious involvement, mothers' religious involvement, fathers' social involvement and mothers' social involvement are positively related in all possible combination. The impact of the parents' religious and social involvement failed to emerge for all the psychological tools except for fathers' social involvement indicating greater scores on parents rating. The analyses of covariance show fathers' religious involvement to indicate lower imagination and fathers' social involvement to indicate higher parents' rating (Grindal & Nieri, 2015). These findings are in support of the fourth hypothesis. However, no significant impact of parents' religious involvement and parents' social involvement emerged on intelligence and academic self-concept; the findings against the fourth hypothesis.

The findings with regards to significant impact of parents' religious involvement and parents' social involvement on creativity and academic performance have been reserved as the character of the population under study. This is in view of the fact that researches exploring religiosity and social involvement pertaining to creativity and academic performance remain significantly wanting.

Interrelationships between Intelligence, Creativity, Academic Self-Concept and Academic Performance

In order to determine the intelligence score of the participants, two subtests i.e. perceptual reasoning index (PRI), and the working memory index (WMI) had been used in the present study. The descriptive statistics revealed that with the increase in the score on the PRI, the score on the WMI also increases. It may be recalled that the PRI is considered a measure of perceptual and fluid reasoning, spatial processing, and visual-motor integration. It refers to tasks that involve nonverbal reasoning, problem solving, abstract concepts, rules, generalizations, or logical relations. In the psychological tool WISC-IV, PRI were tested with a variety of activities: block design which measured abstract problem solving and spatial perception; matrix reasoning which measured inductive reasoning, and spatial reasoning and the ability to perceive visual details; and picture concepts which measures fluid reasoning; and perceptual organization which is the ability to organize nonverbal concepts in a way that they can be processed most quickly and accurately and categorization which is a skill to

recognize the common features of nonverbal concepts. It is important that as children grow, good perceptual reasoning skills become increasingly important for success at school.

The WMI comprehensive score includes rote verbal learning, working memory, and the ability to sequence auditory information. It refers to the cognitive system that stores information in an accessible state; and the ability to temporarily hold several facts or thoughts in memory while solving a problem or performing complex mental tasks (Hill et al., 2010; Sattler, 2008). It is considered to involve attention, concentration, cognitive flexibility, and sequencing skill and higher-order cognitive abilities as well as the ability to prevent the intrusion of irrelevant associations in the service of actively processing information (Abbott, 2007; Dehn, 2008; Sattler, 2008; Shipstead & Engle, 2013). In the psychological tool WISC-IV, working memory was tested with a variety of activities: Letter number sequencing which measured one's skill at organizing and manipulating two or more somewhat different verbal concepts quickly and accurately; Digit Span which measures short-term memory, attention, and concentration; and Arithmetic which measures concentration and systematic problem-solving ability in addition to mathematical knowledge.

Researchers (Flanagan et al., 2000; Flanagan & Kaufman, 2004; Phelps et al., 2005; Keith et al., 2006) reported that PRI measures fluid reasoning ability (matrix reasoning and picture concepts), and visual processing ability (block design), whereas WMI measures short term memory and crystallized intelligence (digit Span, letter-number sequencing) and arithmetic may however provide a mixed measure of fluid and quantitative reasoning, working and short-term memory.

In support to the works of Colom and Mendoza (2007) who posited that both fluid (Progressive Matrices Test) and crystallized (Verbal IQ measured by the WISC-III) intelligence predict scholastic achievement. The present study had also revealed that intelligence is not a single characteristic but a collection of several distinct abilities as propagated by Thurstone (1938) who suggested that intelligence is a composite of seven distinct primary mental abilities. Similarly the present study also confirmed that the participants who have better fluid reasoning ability, visual processing abilities also have higher working memory or short term memory.

Fluid intelligence has been considered to be a very good predictor of academic performance and is regarded as the most reliable and predictive measure for successful performance in both educational and professional settings (Gottfredson, 2002). On the other hand since working memory requires attention and concentration it is strongly regarded as a good predictor of academic performance (Wechsler, 2005). The present study therefore claims

that both PRI and WMI corroborate extensively in determining the intelligence and in predicting the academic performance of the participants.

The present study also revealed that with the increase in PRI there is also an increase in originality and that increase in WMI indicated increase on fluency. The relationship between intelligence and creativity had been studied by different researchers and the nature of their relationship has also been argued upon. According to Torrance (1969 & 1974) originality is the ability to produce ideas that are unusual, statistically infrequent, not banal or obvious. The PRI on the other hand measures fluid reasoning ability that involves reasoning, problem solving, abstract concepts, logical thinking, which corresponds with original thinking. So if the child has the capacity to reason well, have problem solving capacity and can tackle abstraction with logical thinking, he or she has to have originality.

Similarly, fluency has been described as the ability to produce a large number of ideas (Torrance, 1969 & 1974). The experiments conducted to observe the fluency of the participants using the TCAM required good working memory as they had to perform a task where they have to do some quick thinking and the total number of ideas that were produced was recorded to depict their fluency.

The outcomes of the present study therefore established that there is a relation between intelligence and creativity and that they correspond to each other in predicting the academic performance of the participant. However, the extent of their contribution towards the academic performance may vary. Rindermann and Neubauer (2004) maintained that both intelligence and creativity have an impact on academic achievement, but the direct effect of intelligence on academic achievement is much higher while creativity has a moderate effect on academic achievement; the findings of the present study.

The relationship between intelligence and creativity has been recognized, some researchers (Hassan & Butcher, 1966; Ginsberg & Whittemore, 1968) posited that intelligence and creativity are highly correlated while others (Preckel, Holling & Wiese, 2005) proposed the threshold hypothesis wherein they claimed that intelligence and creativity is related up to a certain IQ level. Guilford (1950, 1967, 1970 & 1975) claimed creativity to be a subset of intelligence. In contrast, Sternberg and Lubart (1995) considered intelligence to be a subset of creativity. On the other hand, Getzels and Jackson (1962) maintained that they are two completely different and independent constructs.

Further, the finding of the present study revealed that with the increase in PRI and WMI, the parents' rating, the teachers' rating and academic grade also increases. It has also showed that children who scored high on PRI and WMI are with parents possessing higher

educational qualifications. Various studies had reported that parental expectations and support for children's academic achievement have shown an association with children's academic achievement (Steinberg et al., 1992; Singh et al., 1995; Wang & Wildman, 1995; Frome & Eccles, 1998).

Educated parents are normally able to provide guidance and support to their children's studies, they also tend to motivate them to work for better academic performance (Onacha, 1985; Sharma, 2004; Willinghem, 2012) and researches had revealed that the children of such parents are more intelligent (Loehlin, 2000) and educated parents are also more bent on giving higher ratings to their children (Halle et al., 1997).

In addition, the educated parents are usually aware of the importance of providing space, learning environment and materials to their children. Adding up all the factors help the children develop their intellectual capacity. Therefore with better intellectual capacity and more exposure to learning environment the perceptual reasoning and working memory of the children also are better which shows in their academic grade as well (Deary et al., 2007; Chandra & Azimmudin, 2013). Intrinsically, teachers who are the persons who have the most access to the knowledge of the intellectual capacity and performance of their students, they normally give higher ratings to the students with higher level of intelligence.

Several researchers (Steinberg et al., 1992; Eccles, 1993; Singh et al., 1995; Wang & Wildman, 1995; Frome & Eccles, 1998; Davis-Kean, 2005; Pearce, 2006; Vartanian et al., 2007) reported that those children whose parents have high expectations receive higher grade in their academic performance. Feinstein and Symons (1999) even stated to the extent that, parenting is much more important than schooling in regards to the educational attainment. According to Astone and Mclanahan (1991), Parents aspirations and practices such as monitoring school progress, general supervision and talking with the child are related to all of the school achievement indicators, including grades, attendance, attitudes, expectations, school retention and degree completion.

Similarly, teachers rating, expectation and appraisals of the students have been found to have a great impact on the student's self-concept of ability and in determining how well and how much a student learn (Pianta, 1999; Pianta & Steinberg, 1992). The teacher's judgments of student ability in preschool (Stoner & Purcell, 1985) and elementary school subject areas (Hopkins, George & Williams, 1985) have also been reported to be consistent with their performance on standardized tests (Hoge & Coladarci, 1989) in their IQ (Svanum & Bringle, 1982) and achievement tests (Doherty & Connolly, 1985; Egan & Archer, 1985). Teachers have also been found to adapt their perceptions and interactions with students on the

basis of their expectations. Good and Brophy (1987) reported that students whom teachers perceived as high achievers received more response opportunities and more positive feedback as compared to their classmates perceived as low achievers.

The finding of the present study that fluency emerged to be positively correlated with teacher's rating and higher academic performance is also evident in previous researches (Marjoribanks, 1978; Rosenthal, 1991; Runco, Noble & Luptak, 1990). These researchers claimed that expectations and thoughts held by teachers and parents about the characteristics of creative children may have very powerful influences on the children. Researchers (Pianta et al., 2005; Saracho & Spodek, 2007; Brown, Molfese & Molfese, 2008) speculated that the teacher characteristics and behaviours also play an important role in promoting the social and cognitive development of young children.

Educational attainment and professional development is also found to lead to more positive interactions between teachers and the children in their classrooms. In the words of Peisner-Feinberg and colleagues (2001), these positive teacher-child interactions can influence the overall emotional climate of the classroom, thus encouraging children to become more active explorers in their environment which can influence a child's cognitive and social development. Supporting these findings, teachers rated the academic performance of students who are fluent as indicated in the present study.

Regarding the academic self-concept of the children, the research revealed that the academic self-concept emerged to be negatively correlated with teacher's rating and academic grade. Researchers (Marsh, 1989 & 1990a; Wigfield & Karpathian, 1991; Wigfield et al., 1997 ; Guay et al., 2003; Valentine et al., 2004; Filipp, 2006) posited that the self-concepts of very young children are very positive and at the beginning of schooling, they tend to overestimate their abilities but at a later stage with experience, children learn their relative strengths and weaknesses so that specific self-concept domains become more differentiated and more highly correlated with external indicators like the teachers' ratings. It is only when the children grow older (5 to 8 years of age) that their academic self-concept improved and become more firmly established and stable (Marsh, Craven, and Debus, 1998). The present participants are still young children (6 to 8 years) therefore their academic self-concept does not seem to be realistic and as revealed in the study, the high academic self-concept that the children portrays does not correspond with the teachers rating.

Academic performance in the present study is operationalized with three indicators, such as parents' rating, teachers rating and academic grade. This is following the work of research exploring the performance of children academic performance (Marsh & Yeung,

1997; Guay et al., 2003; Bacon, 2011; Mohammadyari, 2013). The findings of the present study revealed parent' rating, teachers' rating and academic grade to be positively related in all possible combinations. Thus, the indicator of academic performance can be considered to be satisfactory following the works of researchers in the field.

The prediction of Academic Performance from Intelligence and Creativity

The structural equation modelling (SEM) also revealed the significant predictability of academic performance from intelligence and creativity, the predictability from intelligence emerged to be highly dominant over creativity; the findings in support of the fifth hypothesis. In contrast, academic self- concept failed to evince any significant relationships with the variables under study, which is contrasting to the fifth hypothesis of the study. The mediating role of: intelligence and creativity emerged in the predictability of decreasing academic performance from age, and school in the predictability of increasing intelligence from fathers' educational qualification. Finally, significant non- mediated indirect paths to better academic performance emerges due to being female, higher fathers educational qualification and enrollment in the private school.

As highlighted in the foregoing, the relationship between intelligence and academic performance has been established in literature (Mehrotra, 1986, Neisser et al., 1996; Agarwal, 2002; Deary et al., 2007; Lynn & Mikk, 2007). Harris (1961) opines that intelligence in one of the most important factors that have an influence on the academic performance of the students. Empirical evidence determines that students with higher intelligence tests' scores have better academic performance than students with lower intelligence tests' scores.

The general consensus however is usually that intelligence is the best single predictor of scholastic achievement (Jensen, 1980; Gustafsson & Undheim, 1996; Neisser et al., 1996; Gottfredson, 2002; Kuncel et al., 2004; Laidra et al., 2007; Furnham & Monsen, 2009; Xin & Zhang, 2009). In contrast, other researchers argued that the relationship is weak and only moderating effects exist or that it is not significant (Chamorro-Premuzic & Reichenbacher, 2008; Ziegler, Knogler & Bühner, 2009). There are also researchers who reported an average correlation of intelligence with academic performance (Jensen, 1980; Gustafsson & Undheim, 1996; Neisser et al., 1996).

Both intelligence and creativity have been found to have an impact on academic achievement in previous researches; the direct effect of intelligence on academic achievement has been considered much higher, while creativity is considered to have has a moderate effect (Rindermann & Neubauer, 2004; Naderi et al., 2009 & 2010a&b).

Several researchers had studied the impact of creativity on academic performance with contrasting views and no definite conclusion could be drawn concerning the relation. Researchers (Getzels & Jackson, 1962; Mahmodi, 1998; Struthers et al., 1996; Ai, 1999; Powers & Kaufman, 2004; Naderi et al., 2009; Hansenne & Legrand, 2012) reported significant associations between creativity and academic performance, showing that creativity could even lead to better performance (Cicirelli, 1965; Feldhusen et al., 1965; Torrance, 1963; Yamamoto, 1964a).

However, all studies of the relation between creativity and academic achievement do not agree with each other. Researchers (Edward & Tyler, 1965; Mayhon, 1966; Tranpraphat, 1976; Behroozi, 1997, Karimi, 2000; Nori, 2002) showed no significant relationship between creativity and academic performance. In contrast, group of researchers (Haddon & Lytton, 1968; Krause, 1972, Karimi, 2000) reported low correlation between creativity and academic performance. Another interesting finding on the relationship between creativity and academic achievement is that, the strength of the creative abilities differs in terms of the subjects being analyzed (Cicirelli, 1965; Marjoribanks, 1976; Freund et al., 2007).

Following the findings of earlier researchers, the finding that emerged in the present study revealed a small but significant relation between the academic performance of the participants and creativity (fluency, originality and imagination). Supporting the finding of the present study, Niaz and colleagues (2000) had posited that the strength of the relationship between creativity and academic performance differs in every examined aspect of creative abilities. Elaboration strongly correlates with academic performance, whereas fluency, flexibility and originality moderately correlate with academic performance, and the strength of these relations changes in the case of different types of school subjects.

The present study revealed that creativity is fostered in the young children, however, significantly necessary elements appears to remain wanting in the academic sphere. Researchers (Tegano, Moran & Sawyers, 1991; Mayesky, 1998; Isenberg & Jalongo, 2001) emphasized that all young children evidence the potential for creativity but parental and teacher attitudes and behaviours that devalue creativity will thwart its development (Roeper, 1977; Wright & Wright, 1986).

It is believed that young children's creativity can be nurtured through educational settings in three respects: the creative environment, creative programmes and creative teachers and ways of teaching (Mellou, 1996). The role of creativity needs to be emphasized in the schools by establishing a class environment that accepts and reinforces new ideas. Acceptance of children's ideas motivates them to develop more ideas. According to Moran

(1990), Young children need to be encouraged to endure their creativity (i.e., developing and generating original ideas), which provides the basis for their creative aptitude.

The SEM, contrasting to the fifth hypothesis, shows that the academic self-concept failed to evince any significant relationships with other variables under study. In a review, Purkey (1970) reported that a significant relationship exist between self-concept and school performance. Numerous other researchers (Wylie, 1979; Cokley, 2000; Awad, 2007; Bacon, 2011; RaisSaadi et al, 2012) that looked into the relationship between academic self-concept and their academic performance had established a positive relationship. Researchers (Marsh, 2007; Pullmann & Allik, 2008) maintained that a positive academic self-concept is beneficial, particularly for motivating individuals to improve their academic performance.

The relationship between academic self-concept and academic performance has been supported by two models. The self enhancement model proposed that academic achievement is due to the consequence of academic self-concept whereas the skill-development model maintained that academic achievement improves the academic self-concept (Calsyn & Kenny, 1977; Marsh et al., 1999 & 2002; Marsh, 2006). Some other researchers claimed that the relationship is reciprocal (Shavelson & Bolus, 1982; Marsh et al., 1999; Guay et al., 2003; Marsh & O'Mara, 2008; Kornilova, Kornilov & Chumakova, 2009).

However, there are other group of researchers who reported no evidence of the relationship between academic self-concept and the academic performance, the findings in support of the present study (West et al., 1980; Maruyama, Rubin & Kingsbury, 1981; Newman, 1984; Byrne, 1986; Chapman & Tunmer, 1997). It may however be noted that many of the research findings reported are studies done with older children (secondary to college students). To examine the developmental perspective, researchers (Guay et al., 2003) conducted a multicohort-multioccasion study based on samples from Grades 2 to 4 and found support for the reciprocal-effects model over different age cohorts. In addition, researchers (Chapman & Tunmer, 1997; Skaalvik, 1997; Guay et al., 2003) reported the existence of a link from prior academic self-concept to subsequent achievement for young elementary children.

The outcome of the present study does not provide evidence for the predictability of academic performance from academic self-concept. The reason may be ascribed to the inaccurate academic self-concept portrayed by the young children who are believed to have a highly positive self-concept and tends to overestimate their abilities at the beginning of schooling and that this positive halo effect is stated to be normal in young children (Marsh, 1989 & 1990a). However, but with increasing life experience and as they grow older, the self-

concept is also known to improve with age and their academic self-concept becomes more stable as children learn their relative strengths and weaknesses so that specific self-concept domains become more differentiated and more highly correlated with external indicators (Marsh & Yeung, 1998; Jacob et al., 2002; Guay et al., 2003; Valentine, DuBois & Cooper, 2004).

Researchers also posited that academic self-concept varies as students move through grades in which their academic self-concept tends to rise in the direction of their academic achievement (Jacob et al., 2002; Liu & Wang, 2005), whereas, there are others studies that highlighted that it tends to become weaker (Marsh & Yeung, 1997; Marsh et al., 2002). In an investigation among grade 3 to grade 7 students, with respect to specific self-concepts, Burnett (1996) found a decline with age. He posited that such declines may be due to a change with age from egocentricity to objectivity and a lessening of acquiescence, but alternatively may reflect a suppression of optimism by teachers, parents and schooling.

The academic self-concept of very young children as revealed in the present study do not have any significant impact on the academic performance the reason for which can be attributed to the fact that children of very young age do not have an accurate self-concept. The conclusion made by Helmke and van Aken (1995) that during elementary school, self-concept is mainly a consequence of cumulative achievement-related success and failure and that it does not have a significant impact on later achievement, neither on marks nor on test performance is therefore deemed acceptable.

Participants from the private school as compared to the government school have been found to perform better on the PRI and WMI sub scales of intelligence which was also evident in the descriptive statistics which means that the children from private schools show higher intelligence. Children with higher parents educational qualification and higher occupation and also with higher income are found to be basically enrolled in the private schools. Previous research has revealed that higher level of parental socio-economic status proves to be a powerful predictor of the academic performance of children (Domhoff, 1998; Hanes, 2008). Similarly, parents who are socially, educationally and economically advantaged foster a high level of achievement for their children (Considine & Zappala, 2002).

A decrease in the academic performance is also found with the increase in age. The mediating role of intelligence and creativity emerged in the predictability of decreasing level of academic performance as the age of the participants' increases. Similar finding have been previously reported by Jensen (1980) that the correlation between intelligence and academic performance appears to decline with age, being highest in primary school and lower in middle

school and college. Pind, Gunnarsdottir and Johannesson (2003), opines that the decrease in the magnitude of this correlation is generally explained by the restriction of range that occurs as a result of fewer students being enrolled in the upper echelons of the educational system. Research has also revealed that children's creativity began to decline around age 6 and slumps further in the fourth grade (Torrance, 1968). This finding is also supported by Smith and Carlsson (1983, 1985 & 1990) who reported that a slump in creativity occurs around age seven.

The higher fathers' educational qualification also indicated significant indirect path for the increase in academic performance. Fathers' with higher educational qualification tends to provide support to their children not only financially but also through providing good academic environment, with textual and academic materials. Besides they are able to give guidance to their children. Children from well-educated family have been found more likely to perform better in the academic sphere (Onacha, 1985; Nannyonjo, 2007). In a recent study, Memon (2010) has also established a positive relationship between fathers' level of education and the performance of their children.

The SEM also revealed significant non-mediated indirect paths to better academic performance to emerge due to being female, higher fathers' educational qualification and enrollment in the private school. Previous researches have substantiated the present finding. In view of the foregoing, females as compared to males have been known to perform better academically (Lynn et al., 2005a&b), to score higher on PRI and WMI as compared to men (Lao, 1980; Kimball, 1989, Wilberg & Lynn, 1999; Ariffina et al., 2010) and to score higher on overall academic subject except in physics (Deary et al., 2007).

Chapter VI

SUMMARY AND CONCLUSION

The present study was designed to investigate the predictability of academic performance from intelligence, creativity and academic self-concept among young Mizo children between the ages of 6 to 8 years. In order to fulfill the purpose of the research, the following psychological tools was employed: Wechsler Intelligence Scale for Children-Fourth Edition (WISC-IV; Wechsler, 2004), Thinking Creatively in Action and Movement (TCAM, Torrance, 1981), Academic Self-concept Scale purposively designed for the study (following the works of Marsh et al., 1983; Fakhroo et al., 2008) and Academic Performance Index based on Parents' Rating and Teachers' Rating of their children as well as the Academic Grade of the last examination. In addition to the psychological tools, a form to attain the demographic profile of the child and their parents was also developed.

Therefore, to determine the predictability of academic performance from intelligence, creativity and academic self-concept, the present study works with the following objectives: Firstly, to elucidate the pattern of variation due to 'sex' (male and female) on intelligence, creativity, academic self-concept and academic performance; Secondly, to discern the pattern of variation due to 'school' (government and private) on intelligence, creativity, academic self-concept and academic performance; Thirdly, to elucidate the pattern of variation due to 'sex x school' on intelligence, creativity, academic self-concept and academic performance; Fourthly, to demonstrate the role of the 'demographic variables' (age, number of siblings, birth order, family size, fathers' educational qualification, mothers' educational qualification, fathers' occupational status, mothers' occupational status, family income, fathers' religious involvement, mothers' religious involvement, fathers' social involvement and mothers' social involvement) in explaining variances on intelligence, creativity , academic self-concept and academic performance; and Finally, to illustrate the predictability of the academic performance from intelligence, creativity and academic self-concept encompassing for the demographic variables.

Keeping in view the target objectives, a multistage random sampling procedure was employed for selection of the participants for the study. In order to keep the homogeneity of the sample, the area was limited to schools within Aizawl municipal area, Mizoram. Eventually, 391 participants (191 males and 200 females) between 6-8 years of age, out of which 187 participants were selected from government primary schools and 204 participants were taken from the government recognized private schools.

The ‘School’ encompasses the ‘government school’ (schools managed by the central and state government, local bodies and schools aided by the state government); and “Private School’ (schools solely run and managed by individual owner and not aided by the government). The sampling frame encompasses for random selection of the schools and the participants from class I, II and III, based on computer generated random number, with the participants within the age range of 6 to 8 years. The participants under each class of study were finally selected based on computer generated random number.

To ascertain the applicability of the psychological tools and the descriptive nature of the demographic variables and the measured psychological variables, the following statistical treatments were employed: Firstly, the psychometric properties of the items of the academic self-concept, parent’s rating form and teacher’s rating form were ascertained by employing item-total statistics with the inclusion criteria of $r > .2$. Secondly, the internal consistency of all the psychological tools (block design, digit span forward, digit span backward, picture concept, letter number sequencing, matrix reasoning, arithmetic, fluency, originality, imagination, academic self-concept, parent’s rating and teacher’s rating, academic grade) was ascertained. Thirdly, the descriptive statistics (mean, standard deviation, skewness and kurtosis) for the demographic variable and the behavioural measures was computed.

Fourthly, bivariate correlation coefficients was computed for sex, school and the other demographic variables (age, number of siblings, birth order, family size, fathers’ educational qualification, mothers’ educational qualification, fathers’ occupational status, mothers’ occupational status, family income, fathers’ religious involvement, mothers’ religious involvement, fathers’ social involvement, mothers’ social involvement) and the psychological tools (block design, picture concept, matrix reasoning, digit span forward, digit span backward, letter number sequencing, arithmetic, fluency, originality, imagination, academic self-concept, parent’s rating and teacher’s rating, academic grade) was computed. Finally, histogram was employed to display the frequency of the demographic variables of the number of siblings, birth order, family size, fathers’ educational qualification, mothers’ educational qualification, fathers’ occupational status, mothers’ occupational status, family income, fathers’ religious involvement, mothers’ religious involvement, fathers’ social involvement, mothers’ social involvement.

Keeping in view the target objectives of the study, series of analyses of covariance for the 2 x 2 (2 sex x 2 school) factorial design was employed. The analyses of covariance for ‘2 sex’ x ‘2 schools’ on each of the psychological tools was conducted separately with the other demographic variables of age, number of siblings, birth order, family size, fathers’

educational qualification, mothers' educational qualification, fathers' occupational status, mothers' occupational status, family income, fathers' religious involvement, mothers' religious involvement, fathers' social involvement, mothers' social involvement as the covariates. In addition, Fisher's LSD was computed for the significant 'sex x school' interaction.

Finally, structural equation modelling (SEM) was employed to determine the predictability of academic performance from intelligence, creativity and academic self-concept encompassing for sex, school and the demographic variable. The structural equation model incorporated bootstrapping and bias corrected percentile to enable determination of mediation of any significant indirect effect in the structural model.

To determine the model fit in the study, the model chi-square was included as a criterion. In view of the nature of the participants, the variables measured and the sample size of the study the fit indices of: relative chi-square (CMIN/df) less than 2 (Ullman, 2001); Goodness of Fit Index exceeding .90 (Byrne, 1994); Incremental fit index (IFI) exceeding .90 (Bollen, 1989; Raykov, 2000 & 2005) ; Tucker Lewis Index (TLI) values over .95 (Hu & Bentler, 1995); Comparative Fit Index (CFI) exceeding .93 (Byrne, 1994); and the Root mean square residual (RMS) less than .05 (Stieger, 1990) served as the main criteria for model fit.

The responses of the participants obtained through the psychological measures WISC-IV, TCAM, Academic Self-Concept, Parents Rating, Teachers Rating and Academic Grade as well as the demographic profiles were screened, coded and analyzed by employing computer software programmes and are discussed as the following.

Impact of 'Sex' and 'School'

The outcome of the study revealed the predictability of academic performance from 'sex' and 'school'. As hypothesized, females as compared to males and the participants from private school as compared to government schools were found to show better academic performance. These findings emerged from the structural equation modelling (SEM), wherein females as compared to males and private schools as compared to government schools predicted higher scores on intelligence and academic grade. The analyses of covariance supplemented by the bivariate correlation also revealed significant independent effect of 'sex and school' on both the working memory index and academic grade.

Early researches supported the present research in that females obtained better grades. Numerous researches from the 1960s till today had revealed females to show better grades than males from kindergarten through high school and even in colleges (Alexander &

Eckland, 1974; Alexander & McDill, 1976; Mickelson, 1989; Bae et al., 2000; Perkins et al., 2004; Freeman, 2004). Females obtaining higher grades as compared to males also finds corroborative evidences from previous studies: higher CGPA compared to males at pre-collegiate level (Kimball, 1989); better in history tests (Wilberg & Lynn, 1999); better grades in GCSE examinations (Younger, Warrington & Williams, 1999); better academic achievement (Nori, 2002); and better on overall academic subjects except for physics (Deary et al., 2007).

In support to the previous findings, the present research revealed that females as compared to males performed better on working memory. In a recent research, Ariffina and colleagues (2010) also found that female students obtained higher mean scores than males in all of the constructs of working memory index. Results showed that female students have higher intellectual ability than male students in perceptual reasoning and working memory index. The same trend has been found among the young Mizo participants of this study.

The possible reasons for the better attainment of females as compares to males are proposed by researchers (Wainer & Steinberg, 1992; Leonard & Jiang, 1999). They stated that females tends to receive higher grades than males for their nature to work harder, more conscientiously, regularity, better study skills and more effective learning strategies besides they also tend to have better language abilities including essay writing skills, vocabulary and word fluency which contributes to better course work.

The findings that private schools performed better as compared to government schools on WMI and PRI and that they obtained better academic grade has been supported by surveys report in a number of developing countries including India (Kingdon, 1996a; Tooley & Dixon, 2006; Andrabi et al., 2007). The private schools are capable of setting their own standards, in terms of faculty and other teaching-learning materials. Besides students of private schools are usually from better background with supportive parents who are more capable of creating learning environment for their children. Therefore, they are likely to be better in their academic performance since they are attending better schools and are well exposed to scholastic materials, which aid their learning (Considine & Zappala, 2002; Kwesiga, 2002; Escarce, 2003; Sentamu, 2003).

The descriptive statistics of the study also revealed that, females as compared to males are more likely to be enrolled in private school. This contrasted the general trend of the Indian society, where male child are mostly given privilege especially in education. Despite the economic growth and development in India, gender inequalities in access to education and occupational status still remains. Indian children are still immersed in a society where lower

status of women is normative. Kishor and Gupta (2006) reported that till 2006, only two-third of girls from 6 through 17 years of age were enrolled in school, as compared to three-fourths of boys. Besides, 41% of women from 14 through 49 years have never been to a school, as compared to 18% of men. Women are about half as likely as their male counterparts to be employed and receive less compensation for comparable work.

The finding of the present study is however in contrast to the general notion of prioritizing the males. In a Mizo society, the gender disparity is not so distinct as compared to the other parts of the country, and equal opportunities are usually given to the male and female child. As proven time and again in researches that females performed better in academic grades and are more serious in their work (Deary et al., 2007) the same trend is found among the young Mizo children in this study, this can be ascribed to as the tendency for females to be enrolled in the private school.

The analysis of covariance also revealed males as compared to females to be higher on imagination that finds supportive evidence from the bivariate correlation. This finding also emerged in the structural equation model wherein being male predicted higher level of imagination. Researchers reported that there are gender differences in other aspects of creativity. Ai (1999) maintained that flexibility was more prominent in males while elaboration and fluency are more prominent in females. Jiliang and Baoguo (2007) found no sex differences on fluency or flexibility, but on originality, where in males significantly outperformed females. Supporting literature on the difference in imagination in itself is rare.

However, contrary to the finding of the present study, researchers (Kogan, 1974; Tegano & Moran, 1989) in a study with younger students prior to grade three reported the tendency for girls to score higher than boys on fluency and imagination, but in originality boys scored higher. Stephens, Karnes and Whorton (2001) in their study on sex differences in creativity among third and fourth grade American Indian also showed that girls obtained higher scores than boys across all subtests with significant differences in originality and creative index scores.

The difference in the creative ability between males and females may have its root in the socio-cultural milieu. According to Block (1976) in the traditional society, while females are encouraged to conform, males are expected to be active and dominant risk-takers. Even the toys provided to them differ. While boys are provided with toys that enhance their visual-spatial abilities, girls' plays are often highly structured requiring turn-taking and rules (Lever, 1976; Davis & Rimm, 1989). In view of the foregoing research findings and the significant

heterogeneity of variance in the statistical analyses, the dominance of males over females on imagination remains reserved as the socio-cultural characteristics of the participants in the study.

The analyses of covariance also revealed significant interaction effect of 'sex and school' on perceptual reasoning index revealing female from government school to show significantly lower perceptual reasoning as compared to all the three other comparable group.

It may be considered that, female children enrolled in the government schools belongs to the lower socio-economic status family, with low educational qualifications parents, basically because education in government schools are free. In low socio-economic status families it is not unusual that priority is not given to the school work. Children specially the females are generally expected to help their mothers. Uneducated parents usually are unable to help their children in the schoolwork besides due to pressure of work and sometimes ignorance, they are unable to spare their time with their children with little or no motivation, supplemented by the lack of educational learning tools or toys to enhance the intellectual thinking, the perceptual reasoning capability may receive a setback in the children's intelligence.

However, no significant instances for the impact of 'sex' and the demographic variables on academic self-concept were uncovered in the descriptive statistics and in the analysis of covariance.

Impact of Demographic Variables

The significant effect of 'Age' on perceptual reasoning index, working memory index, fluency and originality emerges in the analysis of covariance and is supported by the bivariate relationship. Further, the structural equation model also revealed significant predictability of increasing intelligence and creativity with an increase in age and the decreasing academic performance. The detail observation of the outcomes of structural equation model revealed the moderating influence of intelligence and creativity in the predictability of decreasing academic performance from increasing age.

The finding of the present study is substantiated by the view of the developmental researchers (Dempster, 1981; Hale, 1990; Kail, 1991a&b) who proposed that as children mature, their information processing becomes faster, their short-term memory capacity increases and, their ability to reason improves (Wechsler, 1981; Court & Raven, 1982). Fry and Hale (2000) also claimed that, as children grow older their raw scores on intelligence tests improved. In addition, researchers (Horn & Cattell, 1967; Knox, 1977;

McArdle et al., 2002) reported that fluid intelligence advances rapidly in early and middle childhood, continues to increase though at a slower rate until early adolescence and reaches asymptotic values in the mid-adolescence to late-adolescence stage, after which it begins to decline.

According to the review of literature done by Gathercole and Baddeley (1993) the increase in children's memory ability with age is based on increases in the efficiency of the working memory system. They pointed out that improvement in working memory appears to be purely quantitative beyond the age of 6 years. Therefore as the age increases, the standard of the lesson also becomes more complex and more in volume, as a result the academic performance of the older children as compared to the younger ones may have decreased.

The present research also reported a slight increase in fluency and originality as the children became older. The occurrence of these developmental changes in young children as the age increases was also supported by the study of Mouchiroud and Lubart (2002). Runco (1999) suggested that creativity may either develop gradually as the individual matures and gains life experience or may develop in stages with peaks and slumps found over time. According to Gardner (1982) creativity started at a younger age and proposed that preschool children have high levels of creative ability and expressive artistic creativity. However, various researches have revealed that creativity is not a static construct but develops at a certain period, slumps again due to certain reasons and recovers again (Torrance, 1968; Gardner, 1982; Smith & Carlsson, 1983, 1985 &1990; Meador, 1992).

The present study revealed an increase in creativity as age increases which indicated that the slump, if present, may not have become evident during the particular age under study. The analysis of covariance also revealed that the larger the number of sibling, the lower the imagination which is partly supported by the bivariate correlation. The present study finds support from the findings of Zajonc and Markus (1975) but contrast with the findings of Runco & Bahleda (1986), who reported that children who had several siblings scored higher on verbal divergent thinking tests than only children. Imagination and originality involves divergent thinking, which is one of the major cognitive processes important in creativity. The finding of the research may be reserved as a unique characteristic of the population under study.

Besides, the analysis of covariance revealed larger family size to indicate better fluency and originality which is partly supported by the bivariate correlation. This finding

emerged to be projected in the structural equation model revealing the predictability of more creativity from larger family size. Creativity cannot be created but it can be nurtured or cultivated as it can also be destroyed (Nwosu, 2004). Since children from large families have more opportunity to interact with others siblings which nurture their environment, it makes them less inhibited and more independent which is believed to enhance their abilities to conceive novel ideas which helps them to exhibit more fluency and originality.

Significant effect of fathers' educational qualification on perceptual reasoning index, working memory index and parents' rating emerged in the analyses of covariance. The bivariate correlation also revealed significant relationship of fathers' educational qualification on perceptual reasoning index, working memory index and parents' rating. Consequently, the structural equation model revealed the predictability of better intelligence from fathers' educational qualification and enrollment in private school. Further, the enrollment in the school served as mediating variable in the predictability of intelligence from fathers' educational qualification.

The significance of fathers' educational qualification on the child's educational opportunities has been reported by researchers (Onocha, 1985; King & Bellow, 1989; Musgrave, 2000; Grissmer, 2003). These researchers observed that the higher the attainment for parents, then the greater their aspirations for their children. According to Taiwo, (1993), fathers' educational background can influence the academic performance of students by acting as a second teacher, a guide and counsellor to his child and will also provide the necessary materials needed by the child. Besides, children from educated home are likely to follow the steps of their parents and for that, they work actively in their studies (Musgrave, 2000) and therefore perform better (Onocha, 1985; Nannyonjo, 2007, Memon et al., 2010; Akinsanya et al., 2011).

Contrary to the above claims, researchers (Nagoshi & Johnson, 2004; Pedrosa et al., 2006) indicated that parental education and occupational status do not have a significant influence on offspring intelligence and they stated there is no reason to expect a significant correlation between socio-economic status and scholastic achievement. Thienpont and Verleye (2003) also claimed that social class of origin is a factor of non-importance to account for the relationships among socio-economic status, education, and intelligence and further stated that parental education was not an explaining variable either.

Higher fathers' educational qualification significantly predicted better academic performance in the structural equation model which finds support in the works of different

researchers (Klebanov et al., 1994; Haveman & Wolfe, 1995; Smith et al., 1997), who claimed that there is a significant positive influence of both parents' educational level on the children's academic performance. Researchers (Domhoff, 1998; Hanes, 2008) even proposed that the higher level of parental socio-economic status is a powerful predictor of children's academic performance.

The role of family income emerged in the analysis of covariance and is supported by the bivariate correlation. Better income indicated better scores in perceptual reasoning index. The result of the present study is supported by various researchers (Jaffe, 1985; Odebumni, 1988; Rani, 1998; Dubey, 1999; Simon, 2000; Egbule, 2004; Sharma, 2004; Teese, 2004; Akinsanya et al., 2011). Empirical evidences are provided by these researchers who reported that students whose parents belong to the high ranking occupational status have enough income to provide the needed materials like books, computers, educational toys for intellectual stimulations which are positively associated with better academic achievement.

Researchers (Anderson & Sullivan, 1993; Willingham, 2012) further added that opportunities for children from high income family can often start even before children go to school which includes higher-quality daycares, seeking housing in what the parents believe to be superior school districts, and intentionally cultivating reading, writing, science, and mathematics skills. Researchers (Walker et al., 1994; Anderson & Sullivan, 1993) had also reported that parents of higher socio-economic status have financial, social, and educational supports to assist their children with learning and are often more successful in preparing their young children for school because of the access they enjoy to harness resources responsible to promote and support young children's development.

The significant effect of fathers' religious involvement on imagination emerged in the analysis of covariance that however failed to find any supportive evidence from other statistical analyses. The higher fathers' religious involvement indicated lower imagination. The analysis of covariance also revealed significant effect of fathers' social involvement on parents' rating. The bivariate correlation indicated higher social involvement of the father of the participant to indicate better parents' rating.

The findings with regards to significant impact of fathers' religious involvement and fathers' social involvement on creativity and academic performance have been reserved as the character of the population under study. This is in view of the fact that researches exploring religiosity and social involvement pertaining to creativity and academic performance remain significantly wanting.

Predictability of Academic Performance from Intelligence, Creativity and Academic Self-Concept

The structural equation model revealed the significant predictability of academic performance from intelligence and creativity in support of the hypothesis set forth for the study. The corroborative evidences of this finding consistently emerged in the bivariate correlation and in the analysis of covariance. However, the role of academic self-concept consistently failed to emerge in the study in contrast to the hypothesis that better academic self-concept would predict academic performance.

The predictability of academic performance from intelligence has been established in literature (Mehrotra, 1986, Neisser et al., 1996; Agarwal, 2002; Deary et al., 2007; Lynn & Mikk, 2007). Several researchers opine intelligence as the most important factor that have an influence on the academic performance of the students. Some scholars even claimed that intelligence is the best single predictor of scholastic achievement (Jensen, 1980; Gustafsson & Undheim, 1996; Neisser et al., 1996; Gottfredson, 2002; Kuncel et al.; 2004; Laidra et al., 2007; Furnham & Monsen, 2009; Xin & Zhang, 2009).

Other contrasting views that the relationship is weak and only a moderating effect exist or that it is not significant has also been put forth (Chamorro-Premuzic & Reichenbacher, 2008; Ziegler, Knogler & Bühner, 2009). There are also researchers who reported an average correlation of intelligence with academic achievement (Jensen, 1980; Gustafsson & Undheim, 1996; Neisser et al., 1996).

Similar to the finding of the study, several researchers had studied the impact of creativity on the academic performance and reported positive relationship (Getzels & Jackson, 1962; Struthers et al., 1996; Mahmodi, 1998; Ai, 1999; Powers & Kaufman, 2004; Naderi et al., 2009; Hansenne & Legrand, 2012). Some scholars posited that creativity could even lead to better performance (Torrance, 1963; Yamamoto, 1964a; Cicirelli, 1965; Feldhusen et al., 1965).

However all studies of the relation between creativity and academic achievement do not agree with each other. Researchers (Edward & Tyler, 1965; Mayhon, 1966; Tranpraphat, 1976; Behroozi, 1997; Karimi, 2000; Nori, 2002) showed no significant relationship between creativity and academic achievement. Another group of researchers (Haddon & Lytton, 1968; Krause, 1972) reported low correlation between creativity and academic achievement. Another interesting finding on the relationship between creativity and academic achievement is that the strength of the creative abilities differs in terms of the subjects being analyzed (Cicirelli, 1965; Marjoribanks, 1976; Freund et al., 2007).

Following the findings of earlier researchers, the finding that emerged in the present study also revealed a small but significant relation between the academic performance and creativity (fluency, originality and imagination). Supporting the finding, Niaz and colleagues (2000) had posited that the strength of the relationship between creativity and academic performance differs in every examined aspect of creative abilities. Elaboration strongly correlates with academic performance, whereas fluency, flexibility and originality moderately correlate with academic performance, and the strength of these relations changes in the case of different types of school subjects.

The present study revealed that creativity is fostered in the young children, however, significantly necessary elements appears to remain wanting in the academic sphere. Researchers (Tegano, Moran & Sawyers, 1991; Mayesky, 1998; Isenberg & Jalongo, 2001), emphasized that all young children evidence the potential for creativity but parental and teacher attitudes and behaviours that devalue creativity will thwart its development (Roeper, 1977; Wright & Wright, 1986). It is believed that young children's creativity can be nurtured through educational settings in three respects: the creative environment, creative programmes and creative teachers and ways of teaching (Mellou, 1996).

In the target population, the role of creativity needs to be emphasized in the schools by establishing a class environment that accepts and reinforces new ideas. According to Moran (1990), young children need to be encouraged to endure their creativity (i.e., developing and generating original ideas), which provides the basis for their creative aptitude. Acceptance of their ideas, whatever it may be, motivates them to develop more ideas.

The curriculum and the textbooks also plays crucial role for the nurturance of creativity. The textbooks that have been used may not have been fertile to foster creativity, rather the traditional approach to teaching and learning has been book centric and children are expected to conform to that. However, recently, following the National curriculum framework (2005), new textbooks have been prepared wherein the pedagogy of constructivism have been applied with an introduction of open ended questions which will expose the children to utilize their divergent thinking.

Finally, the standardized regression weight for the predictability of academic performance from higher intelligence emerged to be much more substantial as compared to that of the predictability of better academic performance from creativity. The outcomes of the result therefore established that both intelligence and creativity plays their role in predicting the academic performance of the participant as hypothesized. However, the extent of their contribution towards the academic performance varies. The finding of the study finds support from Rindermann and Neubauer (2004) who also reported that intelligence and creativity both have an impact on

academic achievement, but the direct effect of intelligence on academic achievement is much higher while creativity has a moderate effect on academic achievement.

The present study hypothesized that academic performance would emerge to be predictable from academic self-concept of the participants which however have proved wrong. Review of several researches has established its predictability (Wylie, 1979; Cokley, 2000; Marsh et al., 2001; Marsh, 2004; Awad, 2007; Tan & Yates, 2007; Pullmann & Allik, 2008; Bacon, 2011; RaisSaadi et al., 2012). It may however be mentioned that the studies were mostly done with older students like high school and college students. The present study took very young children of 6 to 8 years and their academic self-concept have been found to be very positive, nevertheless, it fails to have any significant predictive value to their academic performance contrasting to the findings of many previous researches.

The justification for this contrasting finding may be attuned to the age factor. According to researchers (Marsh, 1989 & 1990a; Wigfield & Karpathian, 1991; Gavidia-Payne et al., 2015) the self-concepts of very young children are usually very positive, but however not highly correlated with external indicators. Marsh, Craven and Debus (1998) reiterated that the reliability, stability, and factor structure of academic self-concept scales improved as children (between 5 to 8 years of age) grew older. Therefore, it has been established that with age academic self-concepts become more firmly established, more realistic and stable.

Limitations and Suggestions

It however need to be mentioned that, the sample taken for the study are young children between the age of 6 to 8 years, who have had short experience of schooling. Since very young children as stated earlier are still not consistent in their self-concept, their reported academic self-concept appeared not to be realistic. The younger children amongst the participants i.e., the 6 years old still appear to have social adjustment problem and are found to possess limited attention span, which poses slight difficulty while collecting the data.

The other limitation of the study is that the environment during the test could not be fully controlled. Since the test were taken in the school premises and there were instances that other students peeped and tried to witness the test given and in some cases the noise disturbance was quite distinct which thwarted their level of concentration. Some children also exhibited some inhibition to perform in front of the researcher being a stranger. In spite of all the impediments, before the administration of the tasks, effort was given to build a rapport with each participant and time was given to make the participants relax while maintaining the aura of the investigation.

Creativity needs to be nurtured in young children, therefore teachers especially elementary teachers need to be sensitized on this issue. Mellou, (1996) had posited that young children's creativity can be nurtured through educational settings in three respects: the creative environment, creative programmes and creative teachers and ways of teaching. However according to Iverson (1982) most teachers urge students to be neat, be quiet, be a good listener and to work at their desks. Therefore children's flexibility of thought and action are severely limited, and little creativity exists. The present scenario of the schools in the country in general and the state in particular may rightly reflect the view shared by Iverson (1982). Very few teachers may attempt to urge children to daydream, play, imagine, or reflect. Getzels & Jackson (1962) even opines that teachers often tends to dislike the high creative children, even when they are academically successful, for they usually are troublesome, unusual, difficult to reach, and they may behave in odd ways that do not appeal to the teacher, or their peers and their very originality may upset the even running of the classroom.

Since many studies had established that significant relationship exists between creativity and academic achievement (Torrance, 1962; Getzels & Jackson, 1962; Yamamoto, 1964a; Cicirelli, 1965; Marjoribanks, 1976; Mahmodi, 1998; Ai, 1999, Karimi, 2000), young children needed encouragement to endure propensity for development their creativity which provides the basis for their creative aptitude. Teachers have to learn to encourage children to cultivate creativity and imagination and certain freedom, in an organized form should be given to them.

However, Child (1981) admonition that to develop an atmosphere within which children feels sufficiently free to explore and make discoveries while being given guidance is a difficult one for a teacher to obtain. According to him, too much freedom might encourage anarchy; and too much guidance might produce sterile conformity. Therefore, to nurture the creativity in children, teachers as well as parents need accept their children's ideas and try to motivate them to develop more novel ideas. Therefore, to nurture the creativity in children, teachers as well as parents need accept their children's ideas and try to motivate them to develop more novel ideas. Therefore parents and teachers have to be sensitised on this issue through training or sensitization programmes which can be organised at the school level or through in-service teacher trainings.

As reported by previous studies, at the beginning of schooling, pupils tend to overestimate their abilities (Guay et al., 2003; Valentine, DuBois, & Cooper, 2004; Filipp, 2006; Gavidia-Payne et al., 2015) the academic self-concept of the young participants of the present study was also found to be unrealistic and that may be the reason as to why no significant prediction on the academic performance could be found. It may not be wrong to say that a healthy self-concept is the foundation for the positive development and over-all well-being of a child; it is also an important construct to help a child to reach his full potential. Therefore, teachers and parents must be aware of

the importance of developing positive self-concept on their children. It is however not possible for parents or teachers to simply give their child a healthy self-concept but their support, acceptance and guidance can do a great deal to nurture their child's healthy self-concept. Effort must be made to develop self awareness, social skills, communication skills and age appropriate problem solving skills in the children from a very young age through modelling and activities.

Since the study has been confined to very young children who are still embedded with unstable self-concept, and limited scholastic impression, the study may be extended to older students to outline the developmental variation pertaining to the constructs under study. However, the findings of the study provided empirical foundations relating to the theoretical foundations and empirical relations between the constructs observed in very young children, which find very little reviews in the extant of psychological researches.

In sum, findings revealed that females perform better than males on working memory, while the reversed was observed on imagination. The participants from the private schools were also found to outperform the government schools on intelligence and academic grade. Both perceptual reasoning (PRI) and working memory (WMI), that are positively related, indicate better academic performance. The predictability of academic performance emerged from intelligence, however, the impact that intelligence have emerged to be more as compared to creativity.

The findings also revealed significant impact of the demographic variables on the behavioural constructs under study. The increase of the age of the participants indicated increase in intelligence and creativity and decrease in academic performance. Similarly, larger size of the family indicated better income as well as increase levels in fluency and originality. However, more number of siblings and higher birth order indicated higher enrollment in government schools that further increase the likelihood of obtaining lower scores on working memory, originality, imagination and academic grade. Surprisingly, there emerged a better tendency for females as compared to males to be enrolled in private schools.

In addition, educational qualification and occupation of the parents also emerged to show several impacts. Parents with higher educational qualifications were found to earn more and enroll their children in private schools. In contrast, parents with lower educational qualification were found to bear more number of children and higher birth order of the corresponding participants. The educational qualification of parents further indicated higher levels of intelligence as well as better academic grade of their children. Higher occupational status reflected higher income and the tendency to bear less number of children.

REFERENCES

Abbott, E. N. (2007). *Comparative Study of the Working Memory Scales of the WISC-IV and SB5 in Referred Students.* Theses, Dissertations and Capstones: Marshall University Electronic Theses and Dissertations.

Abdel-Khalek, A. & Lynn, R. (2008). Norms for intelligence assessed by the Standard Progressive Matrices in Oman. *Mankind Quarterly, 49,* 184-186.

Abra, J. (1991). Gender differences in creative achievement: A survey of explanations. *Genetic, Social & General Psychology Monographs, I 17,* 235-250.

Abramson, J. (1927). Essai d'etalonnage de deux tests d'imagination et d'observation [An attempt to standardize two tests of imagination and observation]. *Journal de Psychologie,* 370-379.

Adrian, F., & Buchanan, T. (2005). Personality, gender and self-perceived intelligence. *Personality and Individual Differences, 39,* 543-555.

Agarwal, A. (2002). Some correlates of Academic Achievement. *Indian Journal of Educational Research, 21 (2),* 75-76.

Agwagah, U. N. V., & Harbour-Peters, V. F. (1994). Gender difference in Mathematics achievement. *Journal of Education and Psychology in Third world Africa 1(1),* 19-22.

Ahrens, D. F. (1962). *A Study of Educational Achievement in relation to Creative Thinking Abilities and Intellectual Ability.* Unpublished Ph.D. Dissertation, University of Illinois.

Ai, X. (1999). Creativity and Academic Achievement: An Investigation of Gender differences. *Creativity Research Journal, 12(4),* 329-337.

Aitken Harris, J. (2004). Measured intelligence, achievement, openness to experience, and creativity. *Personality and Individual Differences, 36(4),* 913-929.

Akanle, O. B. (2007). *Socio-economic factors influencing students' academic performance in Nigeria: Some explanation from a local survey.* Sociology and social work community. Free Online Library.

Akinsanya, O. O., Ajayi, K. O., & Salomi, M. O. (2011). Relative Effects of Parents' Occupation, Qualification and Academic Motivation of Wards on Students' Achievement in Senior Secondary School Mathematics in Ogun State. *British Journal of Arts and Social Sciences, 3(2),* 242-252.

Albert, R. S., Runco, M. A. (1989). Independence and cognitive ability in gifted and exceptionally gifted boys. *Journal of Youth and Adolescence, 18,* 221-30.

Alexander, K. L., & Eckland, B. K. (1974). Sex differences in the educational attainment process. American Sociological Review, 39(5), 668-682.

Alexander, K. L., & McDill, E. (1976). Selection and allocation within schools: some causes and consequences of curriculum placement. *American Sociological Review, 41(6),* 963-980.

Alexander, K. L., Entwisle, D. R., & Bedinger, S. D. (1994). When expectations work: Race and socioeconomic differences in school performance. Social Psychology Quarterly, 57, 283–299.

Alexander, K. L., Entwisle, D. R., & Dauber, S. L. (1993). First-grade classroom behaviour: It's Short-and long-term consequences for school performance. *Child Development, 64,* 801-814.

Alexander, K. L., Entwisle, D. R., & Dauber, S. L. (1996). Children in motion: School transfers and elementary school performance. *Journal of Educational Research, 90,* 3-12.

Ali, N., Jusoff, K., Ali, S., Mokhtar, N., & Salamat, A. S. A. (2009). The Factors Influencing Students' Performance at Universiti Teknologi MARA Kedah, Malaysia. *Canadian Research & Development Center of Sciences and Cultures, 3(4),* 81-90.

Aliyu, M. H., Jolly, P. E., Ehiri, J. E., & Salihu, H. M. (2005). High parity and adverse birth outcomes: exploring the maze. Birth, 32, 45-59.

Allik, J., & Realo, A. (1997). Intelligence, academic abilities, and personality. *Personality and Individual Differences, 23 (5),* 809-814.

Allik, J., Must, O., & Lynn, R. (1999). Sex differences in general intelligence among high school graduates: Some results from Estonia. *Personality and Individual Differences, 26(6),* 1137-1141.

Al-Oweidi, A. (2013). Creative Characteristics and Its Relation to Achievement and School Type among Jordanian Students. *Creative Education, 4(1),* 29-34.

Al-Saleh, I., Nester, M., DeVol, E., Shinwari, N., Munchari, L., & Al-Shahria, S. (2001). Relationships between blood lead concentrations, intelligence, and academic achievement of Saudi Arabian school girls. *International Journal of Hygiene and Environmental Health, 204(2-3),* 165-174.

Alvidrez, J., & Weinstein, R. S. (1999). Early Teacher Perceptions and Later Student Academic Achievement. *Journal of Educational Psychology, 91(4),* 731-746.

Alwin, D. F. (1991). Family of origin and cohort differences in verbal ability. *American Sociological Review, 56,* 625-638.

Amabile, T. M. (1983). *The social psychology of creativity.* New York: Springer-Verlag.

Amini, S. (2004). *The role of self efficiency, self regular and self esteem in high school students' academic achievement.* Tarbiat Moallem Tehran, Shaeh Kord, Iran.

Anastasi, A. (1956). *Intelligence and Family Size.* Psychological Bulletin, 53, 187-209.

Anastasi, A. (1982). *Psychological testing.* New York: Macmillan.

Anderson, E. W., & Sullivan, M. W. (1993). The antecedents and consequences of customer satisfaction for firms. *Marketing Science, 12,* 125-143.

Anderson, J. E. (1960). The nature of abilities. In E. P. Torrance (Ed.), *Talent and education* (pp. P-31). Minneapolis: University of Minnesota Press.

Andrabi, T., Das, J., Khwaja, A. I., Vishwanath, T., & Zajonc. (2007). *Learning and Educational Achievements in Punjab Schools: Insights to inform the education policy debate.* Islamabad, Pakistan: World Bank.

Andrews, E. G. (1930). The development of imagination in the preschool child. *The University of Iowa Studies in Character, 3(4).*

Anees, A. (2013). A study of academic Achievement in relation to intelligence of class VII students. *Excellence International Journal of Education and Research, 1(3),* 239-248.

Anh, T. S., Knodel, J., Lam, D., & Friedman, J. (1998). Family size and children's education in Vietnam. *Demography, 35,* 57-70.

Anitha, T. S., Vannessa, J., & Sreelakshmi, G. (2013). A study on the multiple intelligence levels of Secondary school students of Government and Private schools in Secunderabad. *IOSR Journal of Research & Method in Education, 3(4),* 12-18.

Anwar, M. N., Aness, M., Khizar, A., Naseer, M., & Muhammad, G. (2012). Relationship of Creative Thinking with Academic Achievements of secondary School Students. *International Interdisciplinary Journal of Education, 1(3),* 44-47.

Ariffina, S. R., Suppiana, Z., Shahara S. N., Majida, R., Yasina, S. F. M. (2010). Students' Profile Score in Perceptual Reasoning Index (PRI) and Working Memory Index (WMI) for Intelligence Test. *Procedia-Social and Behavioural Sciences, 7,* 77-81.

Aronson, P. (2008). Breaking barriers or locked out? Class-based perceptions and experiences of postsecondary education. In J. T. Mortimer (Ed.), *Social class and transitions to adulthood. New directions for child and adolescent development* (p. 41-54). San Francisco: Jossey-Bass.

Asha, C. B. (1980). Creativity and academic achievement among secondary school children. *Asian Journal of Psychology and Education, 6,* 1-4.

Astone, N., & McLanahan, S. (1991). Family structure, parental practices and high school completion. *American Sociological Review, 56(3),* 309-320.

Awad, G. (2007). The role of racial identity, academic self-concept, and self-esteem in the prediction of academic outcomes for African American students. *Journal of Black Psychology, 33,* 188-207.

Azhar, M., Nadeem, S., Naz, F., Perveen, F., & Sameen, A. (2013). Impact of Parental Education and Socio-Economic Status on Academic Achievement of University Students. *International Journal of Academic Research and Reflection, 1(3),* 25-33.

Bachman, J. G. (1970). *Youth in Transition, Vol. 2, The Impact of Family Background and Intelligence on Tenth-Grade Boys.* Ann Arbor, MI: Institute for Social Research.

Bacon, L. C. (2011). *Academic self-concept and academic achievement of African American students transitioning from urban to rural schools.* Ph. D thesis at Iowa Research Online: http://ir.uiowa.edu/etd/1198.

Bae, Y., Choy, S., Geddes, C., Sable, J., & Snyder, T. (2000). *Trends in Educational Equity of Girls and Women.* Washington, DC: National Center for Education Statistics.

Baer, J. (1998). Gender differences in the effects of extrinsic motivation on creativity. *The Journal of Creative Behaviour, 32,* 18-37.

Baer, J. (1999). Gender differences in creativity. In Runco, M. A. (Ed.), *Creativity research handbook, Vol. 3.* Cresskill, NJ: Hampton Press.

Baer, J., & Kaufman, J. C. (2005a). Bridging Generality and Specificity: The Amusement Park Theoretical (APT) Model of Creativity. *Roeper Review, 27,* 158-163.

Baer, J., & Kaufman, J. C. (2005b). Whence creativity? Overlapping and dual aspect skills and traits. In J. C. Kaufman & J. Baer (Eds.), *Creativity across domains: Faces of the muse* (pp. 313-320). Hillsdale, NJ: Lawrence Erlbaum Associates.

Baer, J., & Kaufman, J. C. (2008). Gender differences in creativity. *Journal of Creative Behaviour, 42,* 75-106.

Baker, D. P., & Jones, D. P. (1993). Creating Gender Equality: Cross-national Gender Stratification and Mathematical Performance. *Sociology of Education, 66,* 91-103.

Bandura, A., & Schunk, D. H. (1981). Cultivating competence, self-efficacy, and intrinsic interest through proximal self-motivation. *Journal of Personality and Social Psychology, 41,* 586-598.

Barliett, F. (1959). *Thinking.* New York: Basic Book, Inc.

Barnard, L., & Olivarez, A. (2007). Self-estimates of multiple, g factor and school-valued intelligences. *North American Journal of Psychology, 9 (3),* 501-510.

Baron, R. A. (1995). *Psychology (3rd Ed.).* Delhi: Prentice-Hall of India Pvt. Ltd.

Barron, F. (1963). *Creativity and psychological health.* Princeton, NJ: D. Van Nostrand Company.

Barron, F. (1969). *Creative person and creative process.* New York: Holt, Rinehart & Winston.

Barron, F., & Harrington, D. M. (1981). Creativity, intelligence, and personality. *Annual Review of Psychology, 32,* 439- 476.

Battin-Pearson, S., Newcomb, M. D., Abbott, R. D., Hill, K. G., Catalano, R. F., & Hawkins, J. D. (2000). Predictors of early high school drop-out: a test of five theories. *Journal of Educational Psychology, 92,* 568-82

Battle, J. (1981). *Culture-free SEI: Self-esteem inventories for children and adults.* Seattle: Special Child Publications.

Battle, J., & Lewis, M. (2002). The increasing significance of class: The relative effects of race and socioeconomic status on academic achievement. *Journal of Poverty, 6(2),* 21-35.

Behroozi, N. (1997). *The Relationship between Personality, Creativity and Academic Achievement among Undergraduate Students.* University of Ahvaz, Ahvaz, Iran.

Bello, A. A. (2009). Perception of details in private and public Schools: the role of demographic variable. *Contemporary Humanities, 3,* September 2009.

Belmont, L., & Marolla, F. A. (1973). Birth order, family size, and intelligence. *Science, 182,* 1096-1101.

Beloff, J. (1992). Mother, father and me: Our IQ. *The Psychologist, 5,* 309-311.

Benjamin, L. T. Jr., Hopkins, R. J., & Nation, J. R. (1994). *Psychology (3rd Ed.).* New York: Macmillan College Publishing Company Inc.

Bennett, M. (1996). Men's and women's self-estimate of intelligence. *Journal of Social Psychology*, *136*, 411-412.

Bentley, J. C. (1966). Creativity and academic achievement. *Journal of Educational Research, 59,* 269-272.

Bertola, G., & Checchi, D. (2013). Who Chooses Which Private Education? Theory and International Evidence. *Labour, CEIS, 27(3),* 249-271.

Bertola, G., Checchi D. (2004). Sorting and private education in Italy. In D. Checchi & C. Lucifora (Eds.), *Education, Training and Labour Market Outcomes.* Palgrave-McMillan.

Bertola, G., Checchi, D., & Oppedisano, V. (2007). Private School Quality in Italy. *Giornale degli Economisti e Annali di Economia, 66(3),* 375-400.

Binet, A. (1904). *La commission ministérielle pour les anormaux.* Bulletin. No. 18.

Binet, A. (1911). New investigation upon the measure of the intellectual level among school children. *L'Annee psychologique, 17,* 145-201.

Binet, A. (1916) [1905]. New methods for the diagnosis of the intellectual level of sub-normals. The development of intelligence in children: The Binet-Simon Scale. E.S. Kite (Trans.). Baltimore: Williams & Wilkins. pp. 37-90. Originally published as Méthodes nouvelles pour le diagnostic du niveau intellectuel des anormaux. *L'Année Psychologique, 11,* 191-244.

Binet, A., & Simon, T. (1908). The development of intelligence in the child. *L'Annee psychologique, 14,* 1-94.

Bjerkedal, T., Kristensen, P., Skjeret, G. A., & Brevik, J. I. (2007). Intelligence test scores and birth order among young Norwegian men (conscripts) analyzed within and between families. *Intelligence, 35,* 503-514.

Blake, J. (1981). Family size and the quality of children. *Demography, 18,* 421-442.

Blake, J. (1989). *Family size and achievement.* Los Angeles: University of California Press.

Blau, P. M., & Duncan, O. D. (1967). *The American Occupational Structure.* New York: Wiley.

Block, J. H. (1976). Issues, problems, and pitfalls in assessing sex differences: A critical review of 'The Psychology of Sex differences'. *Merrill-Palmer Quarterly, 22 (4),* 283–308.

Boling, S. E., & Boling, J. L. (1993). Creativity and birth order/sex differences in children. *Education, 114(2),* 224-226.

Boling, S. E., Boling, J. L. & Eisenman, R. (1995). Creativity and birth order/sex differences in children. *Education, 114,* 224-246.

Bollen, K. A. (1989). A new incremental fit index for general structural equation models. *Sociological Methods and Research, 17,* 303-316.

Bong, M., & Clark, R. E. (1999). Comparison between Self-Concept and Self-Efficacy in Academic Motivation Research. *Educational Psychologist, 34(3),* 139-153.

Bong, M., & Skaalvik, E. M. (2003). Academic self-concept and self-efficacy: How different are they really? *Educational Psychology Review, 15(1),* 1-40.

Boring, E. G. (1923). Intelligence as the tests test it. *New Republic,* 35-37.

Bouchard, T. J. (1993). The genetic architecture of human intelligence. In P. A. Vernon (Ed.), *Biological approaches to the study of human intelligence.* Norwood, NJ: Ablex.

Bowles, S., & Gintis, H. (1976). *Schooling in Capitalist America. Educational Reform and the Contradictions of Economic Life.* London & Henley: Routledge & Kegan Paul.

Bracken, B. A. (2009). Positive self-concepts. In R. Gilman, E. S. Huebner, & M. J. Furlong (Eds.), *Handbook of positive psychology in the schools* (pp. 89-106). New York, NY: Routledge.

Bradley, R. H. (1994). The HOME Inventory: review and reflections. In H. Reese, (Ed.) *Advances in Child Development and Behaviour* (pp.241-88). San Diego, CA: Academic.

Bradley, R. H., Corwyn, R. F., Burchinal, M., McAdoo, H. P., & Coll C. G. (2001a). The home environments of children in the United States, Part 2: relations with behavioural development through age 13. *Child Development, 72,* 1868-1886.

Bradley, R. H., Corwyn, R. F., McAdoo, H. P., & Coll C. G. (2001b). The home environments of children in the United States. Part 1: variations by age, ethnicity, and poverty status. *Child Development, 72,* 1844-1867.

Braun, H., Jenkins, F., and Grigg, W. (2006). *Comparing Private Schools and Public Schools Using Hierarchical Linear Modelling (NCES 2006-461).* U.S. Department of Education, National Center for Education Statistics, Institute of Education Sciences. Washington, DC: U.S. Government Printing Office.

Bredekamp, S., & Copple, C. (Eds.) (1997). D*evelopmentally appropriate practice in early childhood programs* (Revised edition). Washington, DC: National Association for the Education of Young Children.

Breland, H. (1974). Birth order, family con-figuration, and verbal achievement. *Child Development, 45,* 1011-1019.

Brislin, R., Worthley, R., & MacNab, B. (2006). Cultural intelligence: Understanding behaviours that serve people's goals. *Group & Organization Management, 31,* 40-55.

Brody, N. (1992). *Intelligence (2nd Ed.).* San Diego: Academic Press, Inc.

Brody, N. (1997). Intelligence, schooling, and society. *American Psychologist, 52(10),* 1046-1050.

Brooks-Gunn, J., Klebanov, P. K., & Liaw, F. (1995). The learning, physical, and emotional environment of the home in the context of poverty: The Infant Health and Development Program. *Children and Youth Services Review, 17,* 251-276.

Brophy, D. R. (1998). Understanding, measuring and enhancing individual creative problem solving efforts. *Creativity Research Journal, 11,* 123-150.

Brown, E. T., Molfese, V. J. & Molfese, P. (2008). Preschool Student Learning in Literacy and Mathematics: Impact of Teacher Experience, Qualifications, and Beliefs on a At-Risk Sample. *Journal of Education for Students Placed at Risk, 13,* 106-126.

Brunner, M., Keller, U., Dierendonck, C., Reichert, M., Ugen, S., Fischbach, A., & Martin, R. (2010). The structure of academic self-concepts revisited: The nested Marsh/Shavelson model. *Journal of Educational Psychology, 102,* 964-981.

Burnett, P. C. (1996). Gender and grade differences in elementary school children's descriptive and evaluative self-statements and self-esteem. *School Psychology International, 17,* 159–170.

Burns, R. B. (1979). *The self-concept: In theory, measurement, development and behaviour*. London: Longman Group Limited.

Burton, D. 1968. Birth order and intelligence. *Journal of Social Psychology, 76,* 199-206.

Busch, T. (1995). Gender differences in self-efficacy and academic performance among students of business administration. *Scandinavian Journal of Educational Research 39,* 311-318.

Byrd, M., & Stacey, B. (1993). Bias in IQ perception. *The Psychologist, 5,* 309-311.

Byrne, B. (1984). The general/academic self-concept nomological network: A review of construct validation research. *Review of Educational Research, 54,* 427-456.

Byrne, B. M. (1986). Self-concept/academic achievement relations: An investigation of dimensionality, stability, and causality. *Canadian Journal of Behavioural Science, 18,* 173-186.

Byrne, B. M. (1994). *Structural equation modelling with EQS and EQS/Windows.* Thousand Oaks, CA: Sage Publications.

Byrne, B. M. (1996). *Measuring self-concept across the lifespan: Issues and instrumentation.* Washington, DC: American Psychological Association.

Calsyn, R. J., & Kenny, D. A. (1977). Self-concept of ability and perceived evaluation of others: Cause or effect of academic achievement? *Journal of Educational Psychology, 69,* 136-145.

Cambell, F. A., Pungello, E. P., Miller-Johnson, S., Burchinal, M., & Ramey, C. T. (2001). The development of cognitive and academic abilities: Growth curves from an early childhood educational experiment. *Developmental Psychology, 37,* 231-243.

Campbell, J. R., & Wu, R. (1994). Gifted Chinese girls get better mix of family processes to bolster their mathematics achievement: Cross–national and cross cultural perspectives. *International Journal of Educational Research, 21(7),* 685-695.

Cannatella, H. (2004). Embedding Creativity in Teaching and Learning. *Journal of Aesthetic Education, 38(4),* 121-123.

Carlson, N. R., & Buskist, W. (1984). *Science of Behaviour.* London: Allyn & Bacon.

Cattell, R. B. (1941). Some theoretical issues in adult intelligence testing. *Psychological Bulletin, 38,* 592.

Cattell, R. B. (1963). Theory of fluid and crystallized intelligence: A critical experiment. *Journal of Educational Psychology, 54,* 1-22.

Cattell, R. B. (1971). *Abilities: Their structure, growth, and action.* New York: Houghton Mifflin.

Cattell, R. B. (1987). *Intelligence: Its structure, growth, and action.* New York: Elsevier.

Ceballo, R., Vonnie, C. M., & Toyokawa, T. (2004). The Influence of Neighbourhood Quality on Adolescents' Educational Values and School Effort. *Journal of Adolescent Research 19(6),* 716-739.

Ceci, S. J. (1991). How much does schooling influence general intelligence and its cognitive components? A reassessment of the evidence. *Developmental Psychology, 27,* 703-722.

Ceci, S. J., & Gilstrap, L. L. (2000). Determinants of intelligence: Schooling and intelligence. In A. Kazdin (Ed.), *Encyclopaedia of psychology.* Washington, DC. & New York: American Psychology Association and Oxford University Press.

Chamorro-Premuzic, T., & Reichenbacher, L. (2008). Effects of personality and threat of evaluation on divergent and convergent thinking. *Journal of Research in Personality, 42,* 1095-1101.

Chandra, R., & Azimmudin, S. (2013). Influence of Intelligence and Gender on Academic Achievement of Secondary School Students of Lucknow City. *IOSR Journal of Humanities and Social Science (IOSR-JHSS), 17(5),* 9-14.

Chapman, J. W., & Tunmer, W. E. (1997). A longitudinal study of beginning reading achievement and reading self-concept. *British Journal of Educational Psychology, 67,* 279-291.

Chen, E., Matthews, K. A., & Boyce, W. T. (2002). Socioeconomic differences in children's health: How and why do these relationships change with age? *Psychological Bulletin, 128,* 295-329.

Cheng, C. H. K., & Watkins, D. (2000). Age and gender invariance of self-concept factor structure: An investigation of a newly developed Chinese self-concept instrument. *International Journal of Psychology, 35,* 186-193.

Cheung, P. C., & Lau, S. (2010). Gender Differences in creativity of Hong Kong school children: Comparison by using the New Electronic Wallach Kagan Creativity Test for Gender Differences. *Creativity Research Journal, 22(2),* 194-199.

Cheung, P. C., Lau, S., Chan, D. W., & Wu, W. Y. H. (2004). Creative potential of school children in Hong Kong: Norms of the Wallach-Kogan Creativity Tests and their implications. *Creativity Research Journal, 16,* 69-78.

Child, D. (1981). *Psychology and the teacher*. London: Holt, Rinehart and Winston.

Christenson, S. L., Hurley, C. M., Sheridan, S. M. & Fenstermachor, K. (1997). Parents and school psychologists perspectives on parent involvement activities. *School Psychology Review, 26,* 111-130.

Christian, K., Bachnan, H. J., & Morrison, F. J. (2001). Schooling and cognitive development. In R. J. Sternberg & E. L Grigorenko (Eds.), *Environmental effects on cognitive development.* Mahwah, NJ: Erlbaum.

Cicirelli, V. G. (1965). Form of the relationship between creativity, IQ, and academic achievement. *Journal of Educational Psychology, 56(6),* 303-308.

Cicirelli, V. G. (1978). The relationship of sibling structure to intellectual abilities and achievements. *Review of Educational Research, 55,* 353-386.

Cline, V. B., Richards, J. M., & Needham, W. E. (1963). Creativity Test and achievement in High School Science. *Journal of Applied Psychology, 67(3),* 184-189.

Cochrane, S. H., Mehra, K., & Osheba, T. (1985). *The Educational Participation of Egyptian Children.* The International Bank for Reconstruction and Development/The World Bank: Discussion Paper Education and Training Series Report No. EDT45.

Cokley, K. (2000). An investigation of academic self-concept and its relationship to academic achievement in African American college students. *Journal of Black Psychology, 26(2),* 148-164.

Cokley, K., & Patel, N. (2007). A psychometric investigation of the academic self-concept of Asian American college students. *Educational and Psychological Measurement, 67(1),* 88-99.

Cokley, K., Komarraju, M., King, A., Cunningham, D., & Muhammad, G. (2003). Ethnic differences in the measurement of academic self-concept in a sample of African American and European American college students. *Educational and Psychological Measurement, 63(4),* 707-722.

Colclough, C., Rose, P.., & Tembon, M. (2000) Gender inequalities in primary schooling: the roles of poverty and adverse cultural practice. *International Journal of Educational Development, 20,* 5-27.

Coleman, J., Hoffer, T., & Kilgore, S. (1982). Cognitive Outcomes in Public and Private Schools. *Sociology of Education, 55(2),* 65-76.

Colom, R., & Mendoza, C. E. F. (2007). Intelligence predicts scholastic achievement irrespective of SES factors: Evidence from Brazil. *Intelligence, 35,* 243-251.

Colwill, N. (1982). *The new partnership: women and men in organizations.* Palo Alto, CA: Mayfield.

Combs, H. P. (1985). *The world crisis in education: the view from the eighties.* New York: Oxford Press.

Considine, G. & Zappala, G. (2002). Influence of social and economic disadvantage in the academic performance of school students in Australia. *Journal of Sociology, 38,* 129-148.

Contreras, D., Sepulveda, P., & Bustos, S. (2010). When Schools Are the Ones that Choose: The Effects of Screening in Chile. *Social Science Quarterly, 91(5),* 1349–1368.

Coone, J. G. (1969). *A cross-cultural study of sex differences in the development of selected creative thinking abilities* (Doctoral dissertation, University of Georgia, 1968). Dissertation Abstracts International, 29, 4828B.

Corwyn, R. F., & Bradley, R. F. (2002). *Family process mediators of the relation between SES and child outcomes*. Unpublished manuscript, University of Arkansas at Little Rock.

Coulson, A. J. (2009). Comparing Public, Private, and Market Schools: The International Evidence. *Journal of School Choice, 3,* 31–54.

Court, J. H., & Raven, J. (1982). *Manual for Raven's progressive matrices and vocabulary scales*. London: H. K. Lewis & Co.

Covington, M. V. (1984). The self-worth theory of achievement motivation: Findings and implications. *Elementary School Journal, 85,* 5-20.

Craft, A. (2003). Creative thinking in the early years of education. *Early Years, 23(2),* 143-154.

Cramond, B., Matthews-Morgan, J., Torrance, E. P., & Zuo, L. (1999). Why should the Torrance Tests of Creative Thinking be used to access creativity? *Korean Journal of Problem Solving, 9,* 77-101.

Crane J. (1991). The epidemic theory of ghettos and neighbourhood effects on dropping out and teenage childbearing. *American Journal of Sociology, 96,* 1226-1256.

Cropley, A. (2000). Defining and measuring creativity: are creativity tests worth using? *Roeper Review, 23(2),* 1-18.

Crosnoe, R., Johnson, M. K., & Glen, H .E. Jr. (2004). School size and the interpersonal side of education: An example of Race/Ethnicity and organizational context. *Social Science Quarterly, 85(5),* 1259–1274.

Dacey, J. S. (1989). *Fundamentals of creative thinking*. Lexington, MA: Lexington Books.

Dachi, H. A., & Garrett, R. M. (2003). *Child Labour and its Impact on Children's Access to and Participation in Primary Education: A Case Study from Tanzania*. London: Department of International Development (DFID).

Davis, G. A., & Rimm, S. B. (1989). *Education of the gifted and talented (2nd Ed.)*. Englewood Cliffs, NJ: Prentice-Hall Inc.

Davis-Kean, P. D. (2005). The influence of parent education and family income on child achievement: The indirect role of parental expectations and the home environment. *Journal of Family Psychology, 19(2),* 294-304.

De Fraine, B., Van Damme, J., & Onghena, P. (2007). A Longitudinal Analysis of Gender Differences in Academic Self-Concept and Language Achievement: A Multivariate Multilevel Latent Growth Approach. *Contemporary Educational Psychology, 32(1),* 132-150.

Deary, I. J., Strand, S., Smith, P., & Fernandes, C. I. (2007). Intelligence and educational achievement. *Intelligence, 35(1),* 3-21.

Deary, I. J., Thorpe, G., Wilson, V., Starr, J. M., & Whalley, L. J. (2003). Population sex differences in IQ at age 11: The Scottish Mental Survey 1932. *Intelligence, 31,* 533-542.

Dedonno, M., & Fagan, J. (2013). The influence of family attributes on college students' academic self-concept. *North American Journal of Psychology, 15(1),* 49-62.

Dehn, M. J. (2008). *Introduction and overview. In Working memory and academic learning: Assessment and intervention* (pp. 1-8). Hoboken, NJ: John Wiley & Sons, Inc.

DeMoss, K., Milich, R., & DeMers, S. (1993). Gender, creativity, depression, and attributional style in adolescents with high academic ability. *Journal of Abnormal Child Psychology, 21,* 455-467.

Dempster, F. N. (1981). Memory span: sources of individual and developmental differences. *Psychological Bulletin, 89,* 63-100.

Desai, S., & Alva, S. (1998). Maternal education and child health: Is there a strong causal relationship? *Demography, 35(1),* 71-81.

Deslandes, R., Potvin, P., & Leclerc, D. (1999). Family characteristics as predictor of school achievement: Parental involvement as a mediator. *McGill Journal of Education, 34,* 135-153.

Di Fabio, A., & Busoni, L. (2007). Fluid intelligence, personality traits and scholastic success: Empirical evidence in a sample of Italian high school students. *Personality and Individual Differences, 43,* 2095-2104.

Dills, K. A. (2006). *Trends in the relationship between socioeconomic status and academic achievement.* Retrieved on September 30, 2008 from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=886110.

Directorate of School Education (2015). *Annual Publication 2014-15.* Department of School Education (DSE), Govt of Mizoram.

Doherty, J., & Conolly, M. (1985). How accurately can primary school teachers predict the scores of their pupils in standardized tests of attainment? A study of some non-cognitive factors that influence specific judgment. *Educational Studies, 11,* 41-60.

Domhoff, G. W. (1998). *Who rules America?* Mountain View, CA: Mayfield.

Douglas, J. B. (1964). *The Home and the School.* London: Macgibbon & Kee.

Douglas, N. J., & Rushton, J. P. (2006). Males have greater g: Sex difference in general mental ability from 1,00,000, 17-18 years old on scholastic assessment test. *Intelligence, 34,* 479-486.

Downey, D. B. (1995). When bigger is not better: Family size, parental resources, and children's educational performance. *American Sociological Review, 60,* 747-761.

Downey, D. B. (2001). Number of siblings and intellectual development. The resource dilution explanation. *American Psychologist, 56(6-7),* 497-504.

Dubey, K. R. (1999). Effects of Home Environment on the Mental Development of Children. *Journal of Social Psychology, 174,* 221 - 236.

Duckworth, A. L., & Seligman, M. E. P. (2005). Self-discipline outdoes IQ in predicting academic performance of adolescents. *Psychological Science, 16,* 939-944.

Dudek, S. Z., & Verreault, R. (1989). The creative thinking and ego functioning of children. *Creativity Research Journal, 2,* 64-86.

Dudek, S. Z., Strobel, M. G., & Runco, M. A. (1993). Cumulative and proximal influences on the social environment and children's creative potential. *Journal of Genetic Psychology, 154,* 487-499.

Duncan, G., Brooks-Gunn, J., & Klebanov, P. (1994). Economic deprivation and early childhood development. *Child Development 65(2),* 296-318.

Duncan, O. D., Featherman, D. L., & Duncan, B. (1972). *Socio-economic background and achievement.* New York: Seminar Press.

Dusek, J. B., & Joseph, G. (1983). The bases of teacher expectancies: A meta-analysis. *Journal of Educational Psychology, 75,* 327-346.

Dutta, J., Chetiya, P., & Soni, J. C. (2015). A Comparative Study on Intelligence of Secondary School Students in Lakhimpur District of Assam. *International Journal of Development Research, 5(9),* 5594-5599.

Eamon, M. K. (2005): Socio-demographic, school, neighbourhood, and parenting influence on academic achievement of Latino young adolescent. *Journal of youth and adolescents, 34(20),* 163-175.

Ebru, F., & Firdevs, S. C. (2010). The Relationship between Multiple Intelligences and Academic Achievements of Second Grade Students. *Mehmet Akif Ersoy Universitesi; Sosyal Bilimler Enstitusu Dergisi, 2(3),* 83-92.

Eccles, J. S. (1993). School and family effects on the ontogeny of children's interests, self-perceptions, and activity choice. In J. Jacobs (Ed.), *Nebraska Symposium on Motivation: Vol. 40. Developmental perspectives on motivation* (pp. 145-208). Lincoln: University of Nebraska Press.

Eccles, J. S., Wigfield, A., Harold, R. D., & Blumenfeld, P. (1993). Age and gender differences in children's self-and task perceptions during elementary school. *Child Development, 64,* 830-847.

Edwards, M. P., & Tyler, L. E. (1965). Intelligence, creativity, and achievement in a non selective public junior high school. *Journal of Educational Psychology, 56,* 96-99.

Egan, W., & Archer, P. (1985). The accuracy of teacher's ratings of ability: A regression model. *American Educational Research Journal, 22,* 25-34.

Egbule, J. F. (2004). *Practical Guide to a Successful Project or Thesis in Writing and Defense.* Owerri: Whyte and Whyte Publishers.

Eisenman, R. (1992). Birth order, development and personality. *Acta Paedopsychitrica, 55,* 25-27.

Eisenman, R., & Cherry, H. O. (1970). Creativity, authoritarianism, and birth order. *Journal of Social Psychology, 80,* 233-235.

Eisenman, R., & Schussel, N. R. (1970). Creativity, birth order, and preference for symmetry. *Journal of Consulting and clinical Psychology, 34,* 275-280.

Elo, I. T., & Preston, S. H. (1996). Educational differential in mortality: United States, 1979-85. *Social Science Medicine, 42(1),* 47-57.

Entwisle, D. R., Alexander, K. L., & Olson, L. S. (1994). The gender gap in math: its possible origins in neighbourhood effects. American Sociological Review, 59, 822-838.

Ernst, C., & Angst, J. (1983). *Birth order: Its influence on personality.* New York: Springer-Verlag.

Ersado, L. (2005). Child Labor and Schooling Decisions in Urban and Rural Areas: Comparative Evidence from Nepal, Peru and Zimbabwe. *World Development, 33,* 455-480.

Escarce, J. J. (2003). Socioeconomic status and the fates of adolescents. *Health Services Research, 38(5),* 1229-1234.

Eshun, E. F., Osei-Poku, P., & de Graft-Johnson, K. G. (2013). Schools Pupils' Perceptions of Factors Impacting on their Creativity Development in Ghana. *Journal of Education and Practice, 4(1),* 2222-1735.

Evans, W. N., & Schwab, R. M. (1995). Finishing High School and Starting College: Do Catholic Schools Make a Difference? *The Quarterly Journal of Economics, 110(4),* 941-974

Eysenck, H. J. (1982). *A Model for Intelligence.* New York: Springer-Verlag.

Eysenck, H. J., & Cookson, D. (1970). Personality in primary school children: III. Family background. *British Journal of Educational Psychology, 40,* 117-31.

Fagan, J. F., Holland, C. R., & Wheeler, K. (2007). The prediction, from infancy, of adult IQ and achievement. *Intelligence, 35 (3),* 225-231.

Fakhroo, H. A. R., Abd-El-Fattah, S., & Abd-El-Rahem, A. (2008). The Development and Psychometric Properties of the Arab Children's Self-Concept Scale. AARE Conference Proceedings 2007: *Research Impacts: Proving or Improving* (pp. 1-17). Australian Association for Research in Education.

Farooq, M. S., Chaudhry, A. H., Shafiq, M., & Berhanu, G. (2011). Factors affecting Student's quality of academic performance: A case of Secondary school level. *Journal of Quality and Technology Management, 7(2),* 1 - 14.

Featherman, D., & Hauser, R. (1978). *Opportunity and Change.* New York: Academic Press.

Fein, G. (1987). Pretend play: Creativity and consciousness. In P. Gorlitz & J. Wohlwill (Eds.), *Curiosity, imagination, and play* (pp. 281-304). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Feinstein, L., & Symons, J. (1999). Attainment in secondary school. *Oxford Economic Papers, 51(2),* 300-321.

Feldhusen, J. F., Denny, T., & Condon, C. F. (1965). Anxiety, divergent thinking, and achievement. *Journal of Educational Psychology, 56(1),* 40-45.

Feldhusen, J. F., Treffinger, D. J., & Elias, R. M. (1970). Prediction of Academic Achievement with Divergent and Convergent Thinking and Personality Variables. *Psychology in the Schools, 7,* 46-52.

Feldman, D. H. (1989). Creativity: Proof that development occurs. In W. Damon (Ed.), *Child development today and tomorrow* (pp. 240-260). San Francisco, CA: Jossey-Bass.

Feldman, D. H. (2013). *Essentials of Understanding Psychology* (10th Edition). New York: McGraw-Hill.

Filipp, S. H. (2006). Entwicklung von Fähigkeitsselbstkonzepten [The development of academic self-concepts]. *Zeitschrift für Pädagogische Psychologie, 20,* 65-72.

Fischbein, S. (1980). IQ and social class. *Intelligence, 4,* 51-63.

Fishkin, A. S. (1998). Issues in studying creativity in youth. In: A. S. Fishkin, B. C. Ramond & P. O. Lszewski-Kubilius (Eds.), *Investigating Creativity in Youth: Research and methods.* Cresskill, NJ: Hampton Press.

Flaherty, M. A. (1992). The effects of holistic creativity programs on the self-concept and creativity of third graders. *The Journal of Creative Behaviour, 26(3),* 165-171.

Flanagan, D. P., & Kaufman, A. S. (2004). *Essentials of WISC-IV assessment.* Hoboken, NJ: Wiley.

Flanagan, D. P., McGrew, K. S., & Ortiz, S. O. (2000). *The Wechsler Intelligence Scales and Gf-Gc theory: A contemporary approach to interpretation.* Needham Heights, MA: Allyn and Bacon.

Flynn, J. R. (1987). Massive IQ gains in 14 nations: What IQ test really measures. *Psychological Bulletin, 101,* 171-191.

Freeman, C. E. (2004). *Trends in Educational Equity for Girls and Women.* Washington, DC: National Center for Education Statistics.

Frentz, C., Greshman, F. M., & Elliot, S. N. (1991). Popular, controversial, neglected, and rejected adolescents: Contrasts of social competence and achievement difference. *Journal of School Psychology, 29,* 109-120.

Freund, P. A., Holling, H., & Preckel, F. (2007). A multivariate, multilevel analysis of the relationship between cognitive abilities and scholastic achievement. *Journal of Individual Differences, 28,* 188-197.

Friedel, J., Marachi, R., & Midgley, C. (2002). *Stop embarrassing me! Relations among Student Perceptions of Teachers, Classroom Goals, and Maladaptive Behaviours*. Presented at the Annual meeting of the American Educational Research Association, New Orleans, LA.

Frome, P., & Eccles, J. (1998). Parent's influence on children's achievement related perceptions. *Journal of Personality and Social Psychology, 74,* 435-452.

Fry, A. F., & Hale, S. (2000). Relationships among processing speed, working memory, and fluid intelligence in children. *Biological Psychology, 54,* 1-34.

Fuchs-Beauchamp, K. D., Karnes, M. B., & Johnson, L. J. (1993). Creativity and intelligence in preschoolers. *Gifted Child Quarterly, 37,* 113-117.

Funk, J. B. & Bachman, D. D. (1996). Playing violent video and computer games and adolescent self-concept. *Journal of Communication, 46,* 19-31.

Furnham, A. (2000). Parental estimations of their children's multiple intelligences. *British Journal of Developmental Psychology, 18,* 583-594.

Furnham, A., & Bachtiar, V. (2008). Personality and intelligence as predictors of creativity. *Personality and Individual Differences, 45,* 613-617.

Furnham, A., & Gasson, L. (1998). Sex differences in parental estimates of their children's intelligence. *Sex Roles, 38,* 151-162.

Furnham, A., & Monsen, J. (2009). Personality traits and intelligence predict academic school grades. *Learning and Individual Differences, 19,* 28-33.

Furnham, A., & Rawles, R. (1995). Sex differences in the estimation of intelligence. *Journal of Social Behaviour and Personality, 10,* 741-745.

Furnham, A., Forde, L., & Ferrari, K. (1999). Personality and work motivation. *Personality and Individual Differences, 26,* 1035-43.

Furnham, A., Reeves, E., & Budhani. (2001). Parents think their sons are brighter than their daughters. *Journal of Genetic Psychology, 163,* 24-39.

Gabriel, S., & Gardner, W.L. (1999). Are there "His" and "his" Types of Interdependence? The Implications of Gender Differences in Collective Versus Relational Interdependence for Affect, Behaviour, and Cognition. *Journal of Personality and Social Psychology, 77(3),* 642-655.

Gagne, F., & St. Pére, F. (2002). When IQ is controlled, does motivation still predict achievement? *Intelligence, 30(1),* 71-100.

Galton, F. (1874). *English men of science.* London: McMillan.

Galton, F. (1883). *Inquiries into Human Faculty and Its Development.* London: J. M. Dent & Co.

Gardner, H. (1982). *Art, mind, and brain: A cognitive approach to creativity.* New York: Basic Books

Gardner, H. (1993). *Multiple intelligences: The theory in practice.* Basic Books: New York.

Gardner, H. (2001). Creators: Multiple intelligences, In K. P. Feininger and V. Shubik (Eds.), *The Origins of Creativity.* New York: Oxford University Press.

Gardner, H. (2002). The three faces of intelligence. *Daedalus,* 139-142. Translated into German in Gluck (pp. 391–99), Stuttgart: Klett Cotta.

Gathercole, S. E., Baddeley, A., 1993. *Working Memory and Language.* Hillsdale, NJ: Erlbaum.

Gavidia-Payne, S., Denny, B., Davis, K., Francis, A., & Jackson, M. (2015). Children's self-concept: parental school engagement and student–teacher relationships in rural and urban Australia. *Social Psychology of Education, 18,* 121–136.

Gaynor, J. L. R., & Runco, M. A. (1992). Family size, birth order, age-interval, and the creativity of children. *Journal of Creative Behaviour, 26,* 108-118.

George, D. & Mallery, M. (2010). *Using SPSS for Windows step by step: A simple guide and reference.* Boston, MA: Allyn & Bacon.

Getzels, J. W. (1982). Probleme finden -die Natur und Entwicklung von Hochbegabung (Finding problems -the nature and development of giftedness). In K. K. Urban (Ed.), *Hochbegabte Kinder (Gifted children)* (pp. 41-55). Heidelberg: Schindele.

Getzels, J. W., & Jackson, P. W. (1962). *Creativity and intelligence: Explorations with gifted students.* New York: John Wiley & Sons.

Ginsburg, G. P., & Whittemore, R. G. (1968). Creativity and verbal ability: A direct examination of their relationship. *British Journal of Educational Psychology, 38(2),* 133-139.

Glass, L. A., Ryan, J. J., Bartels, J. M., & Morris, J. (2008). Estimating WISC-IV Indexes: Proration versus Linear Scaling. *Journal of Clinical Psychology, 64,* 1175-1180.

Glewwe, P., & Kremer, M. (2006). Schools, teachers and education outcomes in developing countries. In E. Hanushek & F. Welch, (Eds.), *Handbook of the Economics of Education, Vol. 2.* North Holland, Amsterdam.

Glick, J. E., & White, M. J. (2004). Post-secondary school participation of immigrant and native youth: The role of familial resources and educational expectations. *Social Science Research, 33,* 272–299.

Goldbeck, L., Daseking, M., Brida, S. H., Waldmann, H. C, & Petermann, F. (2010). Sex Differences on the German Wechsler Intelligence Test for Children (WISC-IV). *Journal of Individual Differences, 31(1),* 22-28.

Goldenberg, C., Gallimore, R., Reese, L., & Garnier, H. (2001). Cause or effect? A longitudinal study of immigrant Latino parents' aspirations and expectations, and their children's school performance. *American Educational Research Journal, 38(3),* 547–582.

Goldenberg, C., Gallimore, R., Reese, L., & Garnier, H. (2001). Cause or effect? A longitudinal study of immigrant Latino parents' aspirations and expectations, and their children's school performance. *American Educational Research Journal, 38(3),* 547-582.

Gomez, J. G. (2007). What Do We Know About Creativity? *The Journal of Effective Teaching, 7(1),* 31-43.

Good, T. L. (1981). Teacher expectations and student perceptions: A decade of research. *Educational Leadership, 38(5),* 415-422.

Good, T. L., & Brophy, J. E. (1987). *Looking in classrooms (4th Ed.).* New York: Harper & Row.

Goods, C. V. (1973). *Dictionary of Education.* Tata McGraw hill Book Company, New York.

Gottfredson, L. S. (2002). Where and why g matters: Not a mystery. *Human Performance, 15(1/2),* 25-46.

Graetz, B. (1995). Socioeconomic Status in Education Research and Policy. In Ainley, J, Graetz, B., Long, M. and Batten, M. (Eds.), *Social economic Status and School Education.* Canberra: DEET/ACER.

Green F., Machin, S., Murphy, R., &Zhu, Y. (2011). The Changing Economic Advantage from Private Schools. *Economica, 79/316,* 658-679.

Griffore, R., & Samuels, D. (1978). Self-concept of ability and college students' academic achievement. *Psychological Reports, 43(1),* 37-38.

Grigorenko, E. L., Geissler, P. W., Prince, R., Okatcha, F., Nokes, C., Kenny, D. A., Bundy, D. A., & Sternberg, R. J. (2001). The organization of Luo conceptions of intelligence: A study of implicit theories in a Kenyan village. *International Journal of Behavioural Development 25(4),* 367-378.

Grindal, M., & Nieri, T. (2015). An Examination of Ethnic Identity and Academic Performance: Assessing the Multidimensional Role of Parental Ethnic–Racial Socialization among a Sample of Latino Adolescents. *Race and Social Problems, 7,* 242–255.

Grissmer, R. H. (2003). Beyond Helping with Homework: Parents and Children Doing Mathematics at Home. *Teaching Children Mathematics, 14,* 120 - 131.

Guay, F., Marsh, H. W. & Boivin, M. (2003). Academic self-concept and academic achievement: Developmental perspectives on their causal ordering. *Journal of Educational Psychology, 95,* 124-136.

Guilford (1981). Higher-order Structure-of-Intellect abilities. *Multivariate Behavioural Research, 16,* 151-154.

Guilford, J. P. (1967). *The Nature of Human Intelligence.* McGraw-Hill, New York.

Guilford, J. P. (1950). Creativity. *American Psychologist, 5,* 444-454.

Guilford, J. P. (1957). Creative abilities in the arts. *Psychological Review, 64,* 110-118.

Guilford, J. P. (1959). Three faces of intellect. *American Psychologist, 14,* 469-479.

Guilford, J. P. (1960). Basic conceptual problems of the psychology of thinking. *Proceedings of the New York Academy of Sciences, 91,* 6-21.

Guilford, J. P. (1964). Zero correlations among tests of intellectual abilities. *Psychological Bulletin, 61,* 401-404.

Guilford, J. P. (1968). *Intelligence, creativity and their educational implications.* San Diego: Knapp.

Guilford, J. P. (1970). Creativity: Retrospect and prospect. *Journal of Creative Behaviour, 83,* 119-134.

Guilford, J. P. (1975). Creativity: A quarter century of progress. In I. A. Taylor & J. W. Getzels (Eds.), *Perspectives in creativity* (pp. 37-59). Chicago, IL: Aldine.

Guilford, J. P. (1977). *Way beyond the IQ.* Buffalo, NY: Bearly Limited.

Guilford, J. P. (1985). A sixty-year perspective on psychological measurement. *Applied Psychological Measurement, 4,* 341-49.

Guilford, J. P. (1986). *Creative talents: Their nature, uses and development.* Buffalo, NY: Bearly Limited.

Gulati, S. (2003). *Understanding Creativity.* Delhi: Saujanya Books.

Guo, G., & Harris, K. M. (2000). The mechanisms mediating the effects of poverty on children's intellectual development. *Demography, 37,* 431-447.

Gustafsson, J. E., & Undheim, J. O. (1996). Individual differences in cognitive functions. In D. C. Berliner & R. C. Calfee (Eds.), *Handbook of Educational Psychology* (pp. 186-242). New York: Prentice Hall International.

Haddon, F. A., & Lytton, H. (1968). Teaching approach and the development of divergent thinking abilities in primary schools. *British Journal of Educational Psychology, 38,* 171-180.

Haensly, P. A., & Torrance, E. P. (1990). Assessment of creativity in children and adolescents. In Reynolds, C. R. & Kamphaus, R. W. (Eds.) *Handbook of Psychological and Educational Assessment of Children: Intelligence and Achievement.* New York: Gildford.

Hake, R. R. (1998). Interactive engagement versus traditional methods: A six thousand student survey of mechanics test data for introductory physics courses. *American Journal of Physics, 66,* 64-74.

Hale, S. (1990). A global developmental trend in cognitive processing speed. *Child Development, 61,* 653-663.

Halle, T., Kurtz-Costes, B., & Mahoney, J. (1997). Family influences on school achievement in low-income, African American children. *Journal of Educational Psychology, 89(3),* 527-537.

Halpern, D. F., & Lamay, M. L. (2000). The smarter sex: A critical review of sex differences in intelligence. *Educational Psychology Review, 12(2),* 229-246.

Hamre, B. K., & Pianta, R. C. (2001). Early Teacher-Child Relationships and the Trajectory of Children's School Outcomes through Eighth Grade. *Child Development, 72,* 625-638.

Hanes, B. (2008). *The exploration of socioeconomic status and student achievement at Beverly elementary school.* Unpublished thesis: Marietta College.

Hansen, J. B. (2000). *Student Performance and Student Growth as measure of success: A evaluator's perspective.* Paper presented at annual meeting of the American Educational Research Association. New Orleans, Louisiana,

Hansen, N. M., & Mastekaasa, A. (2006). *Social origins and academic performance at university.* USA: Oxford University press.

Hansenne, M., & Legrand, J. (2012). Creativity, emotional intelligence, and school performance in children. *International Journal of Educational Research, 53,* 264-268.

Hansford, B. C., & Hattie, J. A. (1982). The relationship between self and achievement/performance measures. *Review of Educational Research, 52,* 123-142.

Harb, N., & El-Shaarwi, A. (2006). Factors Affecting Students' Performance. *Journal of Business Education, 82(5),* 282-290.

Hargreaves, H. L. (1927). The 'faculty' of imagination: An enquiry concerning the existence of a general 'faculty,' or group factor, of imagination. *British Journal of Psychology Monograph Supplements, 3(10),* 1-74.

Harris, I. (1961). *Emotional blocks to learning.* Glencoe, Ill.: Free Press.

Harris, J. A. (2004). Measured intelligence, achievement, openness to experience, and creativity. *Personality and Individual Differences, 36,* 913-929.

Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experience of young American children.* Baltimore: Paul Brookes.

Harter, S. (1999). *The construction of the self: A developmental perspective.* New York: Guilford Press.

Hassan, P., & Butcher, H. J. (1966). Creativity and intelligence: a partial replication with Scottish children of Getzels and Jackson's study. *British Journal of Psychology, 57,* 129-135.

Hattie, J. (1992). *Self concept.* Hillsdale, NJ: Erlbaum

Hattori, K., & Lynn, R. (1997). Male-female differences on the Japanese WAIS-R. *Personality and Individual Differences, 23,* 531-533.

Hauser, R. M. (1994). Measuring socioeconomic status in studies of child development. *Child Development, 65(6),* 1541-1545

Hauser, R. M., & Sewell, W. H. (1985). Birth order and educational attainment in full sibships. *American Educational Research Journal, 32,* l-23.

Hauser, R. M., & Warren, J. R. (1997). Socioeconomic indexes for occupations: A review, update, and critique. In A. E. Raftery (Ed.), *Sociological Methodology* (pp.177-298). Cambridge, MA: Basil Blackwell.

Haveman, R., & Wolfe, B. (1995). The determinants of children's attainments: A review of methods and findings. *Journal of Economic Literature, 33,* 1829-1878.

Hay, I., Ashman, A., & van Kraayenoord, C. E. (1997). Investigating the influence of achievement on self-concept using an intra-class design and a comparison of the PASS and SDQ-I self-concept tests. *British Journal of Educational Psychology, 67,* 311-321.

Hayes, J. R. (1989). Cognitive processes in creativity. In J. A. Glover, R. R. Ronning, & C. R. Reynolds (Eds.), *Handbook of creativity* (pp. 135-145). New York: Plenum Press.

Heer, D. M. (1985). Effects of Sibling Number on Child Outcome. *Annual Review of Sociology, 11,* 27-47.

Heinzen, T. (1994). Situational affect: proactive and reactive creativity. *Creativity and affect,* 127-146.

Helmke, A., & van Aken, M. A. G. (1995). The causal ordering of academic achievement and self-concept of ability during elementary school: A longitudinal study. *Journal of Educational Psychology, 87,* 624-637.

Herrnstein, R. J., & Murray, C. (1994). *The Bell Curve: Intelligence and Class Structure in American Life.* New York: The Free Press.

Hess, R. D., Holloway, S., Price, G., Dickson, W. P. (1982). Family environments and the acquisition of reading skills. In L. M. Laosa, & I. E. Sigel (Ed.), *Families as Learning Environments of Children* (pp. 87-113). New York: Plenum.

Heuyer, G., Pieron, H., Pieron, Mme. H., & Sauvy, A. (1950). *Le niveau intellectuel des enfants d'age scolaire: une enquete nationale dans lenseignement primaire.* Inst. Natl. Etudes Demographiques: Trav. Doc., Cahier 13.

Hijazi, S. T., & Raza Naqvi, S. M. M. (2006). Factors Affecting Students' Performance: A Case of Private Colleges. *Bangladesh e-Journal of Sociology, 3(1),* 1-10.

Hill, B. D., Elliott, E. M., Shelton, J. T., Pella, R. D., O'Jile, J. R., & Gouvier, W. D. (2010). Can we improve the clinical assessment of working memory? An evaluation of the Wechsler Adult Intelligence Scale-Third Edition using a working memory criterion construct. *Journal of Clinical and Experimental Neuropsychology, 32 (3),* 315-323.

Hill, C. R., & Stafford, F. P. (1974). Allocation of Time to Preschool Children and Educational Opportunity. *The Journal of Human Resources, 9(3),* 323-341.

Hirsh, J. B., & Peterson, J. B. (2008). Predicting creativity and academic success with a "Fake-Proof" measure of the Big Five. *Journal of Research in Personality, 42(5),* 1323-1333.

Hluna, J. V. (1992). *Education and Missionaries in Mizoram*. Guwahati: Spectrum Publications.

Hogan, H. (1978). IQ self-estimates of males and females. *Journal of Social Psychology, 106,* 137-138.

Hogan, P. (1988). Creativity in the family. In F. Flach (Ed.), *The creative mind* (pp. 23-50). Buffalo, NY: Bearly Limited.

Hoge, D. R., Smit, E. K., & Crist, J. T. (1995). Reciprocal effects of self-concept and academic achievement in sixth and seventh grade. *Journal of Youth and Adolescence, 24,* 295-314.

Hoge, R. D., & Coladarci, T. (1989). Teacher-based judgments of academic achievement: A review of literature. *Review of Educational Research, 59,* 297-313.

Hollingworth, L. S. (1942). *Children above 180 IQ Stanford-Binet: Origin and development.* Yonkers-on-Hudson, NY: World Book.

Hopkins, K. D., George, C. A., & Williams, D. D. (1985). The concurrent validity of Standardized achievement tests by content area using teachers ratings as criteria. *Journal of Educational Measurement, 22,* 177-182.

Horn, J. L., & Cattell, R. B. (1967). Age differences in fluid and crystallized intelligence. *Acta Psychologica, 26,* 107-129.

Hossaini, S. M. (2002). F*orecasting between self-esteem, parenting and gender among pre-university of students in Shiraz.* University of Shiraz, Shiraz, Iran.

Hossler, D., & Stage, F. K. (1992). Family and high school experience influences on the postsecondary educational plans of ninth-grade students. *American Educational Research Journal, 29(2),* 425-451.

Hu, L. T., & Bentler, P. M. (1995). Evaluating model fit. In R. H. Hoyle (Ed.), *Structural equation modelling: Concepts, issues, and applications* (pp. 76-99). Thousand Oaks, CA: Sage.

Humphreys, L. C. (1979). The construct of general intelligence. *Intelligence, 3,* 105-120.

Hunt, J. McV. & Paraskevopoulos, J. (1980). Children's psychological development as a function of their abilities. *Journal of Genetic Psychology, 136,* 285-298.

Hunt, J. McV. (1965). Intrinsic motivation and its role in psychological development. In D. Levine (Ed.), *Nebraska symposium on motivation 1965.* Lincoln, NE: University of Nebraska Press.

Hyde, J. S. (2005). The Gender Similarities Hypothesis. *American Psychologist, 60,* 581-592.

Ireson, J., & Hallam, S. (2001). *Ability grouping in education.* London: Chapman.

Isaksen, S. G. (1987). Introduction: An orientation to the frontiers of creativity research. In S. G. Isaksen (Ed.), *Frontiers of creativity research: Beyond the basics* (pp. 1-26). Buffalo, NY: Bearly Limited.

Isenberg, J. P., & Jalongo, M. R. (2001). *Creative expression and play in the early childhood curriculum (3rd Ed.).* Upper Saddle River, NJ: Prentice Hall.

Iverson, P. (1982). *Carlos Montezuma and the Changing World of American Indians.* Albuquerque, NM: University of New Mexico Press.

Jackson, P. W., & Messick, S. (1965). The person, the product, and the response: Conceptual problems in the assessment of creativity. *Journal of Personality, 33,* 309-329.

Jacob, J. E., Lanza, S., Osgood, D. W., Eccles, J. S., & Wigfield, A. (2002). Changes in children's self-competence and value: gender and domain differences across grades one through twelve. *Child development, 73,* 509-527.

Jacobs, J. A. (1996). Gender inequality and higher education. *Annual Review of Sociology, 22,* 153-185.

Jacobson, M. A. (1966). *The relationship of creative thinking ability school performance.* Dissertation Abstract International, 27A, 7157.

Jaffe, B. D. (1985). The Relationship between two Aspects of Socio-Economic Disadvantage and the School Success of 8th Grade Negro Students in a Detroit Junior High School. Doctoral Dissertation, Wayne State University.

January, A. M., Bartoi, M. G., Kuentzel, J. G., Somers, C. L., & Barnett, D. (2015). Tell Me More About It: A Query into the Relations Between Intelligence Scores and Problem Behaviors Using the WISC-IV. *Journal of Child and Family Studies, 24,* 2544–2554.

Jauk, E., Benedek, M., Dunst, B., & Neubauer, A. C. (2013). The relationship between intelligence and creativity: New support for the threshold hypothesis by means of empirical breakpoint detection. *Intelligence, 41(4),* 212-221.

Jencks, C. (1972). *Inequality: A reassessment of the effect of family and schooling in America.* New York: Basic Books.

Jensen, A. R. (1969). How much can we boost IQ and scholastic achievement? *Harvard Educational Review, 39,* 238-244.

Jensen, A. R. (1980). *Bias in mental testing.* New York: Free Press.

Jeynes, W. H. (2002). Examining the effects of parental absence on the academic achievement of adolescents: the challenge of controlling for family income. *Journal of family and Economic Issues 23(2),* 189-210.

Jiliang, S., & Baoguo, S. (2007). Effects of gender and types of materials on creativity. *Psychological Science (China), 30,* 285-288.

Joan, M. T., & Smrekar, C. W. (2009). Influence of Parents' level of Education, Influence on Child's Educational Aspirations and Attainment. *Journal on education development, 32*.

Joffe, L., & Foxman, D. (1988), *Attitudes and gender differences: mathematics at age 11 and 15.* Windsor, UK: NFER-Nelson.

Johnson, K. A. (2000). *The peer effect on academic achievement among public elementary school students.* Massachusetts Avenue, NE, Washington, DC: The Heritage Foundation.

Johnsson-Smaragdi, U., & Jonsson, A. (1 995). Self-evaluation in an ecological perspective: neighbourhood, family and peers, schooling and media use. In K. E. Rosengren (Ed), *Media Effects and Beyond: Culture, Socialization and Lifestyles.* London: Routledge.

Joussemet, M., & Koestner, R. (1999). Effect of expected rewards on children's creativity. *Creativity Research Journal, 12,* 231-239.

Juneja, N. (2001). *Primary Education for All in the City of Mumbai, India: The Challenge Set by Local Actors.* School Mapping and Local-Level Planning. Paris: UNESCO.

Jussim, L. (1991). Social perception and social reality: A reflection-construction model. *Psychological Review, 98,* 54-73.

Jussim, L., & Eccles, J. (1995). *Are teacher expectations biased by students' gender, social class, or ethnicity? Stereotype accuracy: Towards appreciating group differences.* Washington, DC: American Psychological Association.

Kail, R. (1991a). Developmental change in speed of processing during childhood and adolescence. *Psychological Bulletin, 109,* 490-501.

Kail, R., (1991b). Processing time declines exponentially during childhood and adolescence. *Developmental Psychology, 27,* 256-259.

Kainuwa, A., & Yusuf, N. B. M. (2013). Influence of Socio-Economic and Educational Background of Parents on their Children's Education in Nigeria. *International Journal of Scientific and Research Publications, 3(10),* 1-8.

Kane, M. J., & Engle, R. W. (2000). Working-memory capacity, proactive interference, and divided attention: limits on long-term memory retrieval. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 26,* 336-358.

Kane, M. J., & Engle, R. W. (2002). The role of prefrontal cortex in working memory capacity, executive attention, and general fluid intelligence: An individual-differences perspective. *Psychonomic Bulletin and Review, 9(4),* 637-671.

Karimi, A. (2000). *The relationship between anxiety, creativity, gender, academic achievement and social prestige among secondary school.* University of Shiraz, Shiraz.

Kaufman, J. C., & Plucker, J. A. (2011). Intelligence and creativity. In: Sternberg R.J., & Kaufman S.B., (Eds.), *The Cambridge handbook of intelligence* (pp. 771-783). Cambridge: Cambridge University Press.

Kaufman, J. C., Baer, J., & Gentile, C. A. (2004). Differences in gender and ethnicity as measured by ratings of three writing tasks. *Journal of Creative Behaviour, 39,* 56-69.

Keith, T. Z., Fine, J. G., Taub, G. E., Reynolds, M. R., & Kranzler, J. H. (2006). Higher order, multisample, confirmatory factor analysis of the Wechsler Intelligence Scale for Children-Fourth Edition: What does it measure? *School Psychology Review, 35,* 108-127.

Kemp, L. C. D. (1955). Environmental and other characteristics determining attainments in primary schools. *British Journal of Educational Psychology, 25,* 66-77.

Kershner, J. R., & Ledger, G. (1985). Effect of sex, intelligence, and style of thinking on creativity: A comparison of gifted and average IQ children. *Journal of Personality and Social Psychology, 48,* 1033-1040.

Khaleefa, O. H., Erdos, G., & Ashria, I. H. (1996). Gender and creativity in an Afro-Arab Islamic culture: the case of Sudan. *The Journal of Creative Behaviour, 30,* 52-60.

Kim, J., & Michael, W. B. (1995). The relationship of creativity measures to school achievement and to preferred learning and thinlang style in a sample of Korean high school students. *Educational and Psychological Measurement, 55,* 60-74.

Kim, K. H. (2005). Can only intelligent people be creative? *The Journal of Secondary Gifted Education, 26,* 57-66.

Kimball, M. M. (1989) A New Perspective on Women's Math Achievement. *Psychological Bulletin, 105,* 198-214.

King, E. M., & Bellow, R. (1989). *Gains in the Education of Peruvian women, 1940-1980.* World Bank, Washington D.C: Policy research working paper.

Kingdon, G. (1996a). The quality and efficiency of private and government education: a case study of urban India. *Oxford Bulletin of Economics and Statistics, 58(1),* 57-81.

Kingdon, G. (1996b). Private Schooling in India: Size, nature and equity effects. *Economic and Political Weekly, 31(51), December.*

Kirsch, C., Lubart, T., & Houssemand, C. (2016). Creativity in Student Architects: Multivariate Approach. In G. E. Corazza & S. Agnoli (Eds.), *Multidisciplinary Contributions to the Science of Creative Thinking, Creativity in the Twenty First Century* (pp. 175-194). Singapore: Springer Science & Business Media.

Kishor, S., & Gupta, K. (2006). *Gender equality and empowerment in India (NFHS-3).* Ministry of Health and Family Welfare, Government of India.

Klebanov, P. K., Brooks-Gunn, J., & Duncan, G. J. (1994). Does neighbourhood and family poverty affect mothers' parenting, mental health, and social support? *Journal of Marriage and the Family, 56,* 441-455.

Kling, K. C., Hyde, J. S., Showers, C. J., & Buswell, B. N. (1999). Gender differences in self-esteem: A meta-analysis. *Psychological Bulletin, 125,* 470-500.

Knodel, J., & Wongsith, M. (1991). Family size and children's education in Thailand: Evidence from a national sample. *Demography, 28,* 119-131.

Knox, A. B. (1977). *Adult development and learning.* San Francisco: Jossey-Bass.

Koch, H. L. (1957). The relation in young children between characteristics of their playmates and certain attributes of their siblings. *Child Development, 28,* 175-201.

Kogan, N. (1974). Creativity and sex differences. *Journal of Creative Behaviour, 8(1),* 1-14.

Kohn, M. L., Schooler, C. (1982). Job conditions and personality: a longitudinal assessment of their reciprocal effects. *American Journal of Sociology, 87,* 1257-1283.

Koke, L. C., & Vernon, P. A. (2003). The Sternberg Triarchic Abilities Test as a measure of academic achievement and general intelligence. *Personality and Individual Differences, 35,* 1803-1807.

Kornilova, T. V., Kornilov, S. A., & Chumakova, M. A. (2009). Subjective evaluations of intelligence and academic self-concept predict academic achievement: Evidence from a selective student population. *Learning and Individual Differences, 19,* 596-608.

Krause, R. (1972). *Kreativitat* [Creativity]. Munich: Goldmann.

Krause, R. (1977). *Produktives Denken bei Kindern* (Productive thinking with children). Weinheim, Germany: Beltz.

Kristensen, P., & Bjerkedal, T. (2007). Explaining the relation between birth order and intelligence. *Science, 316,* 1717.

Kuncel, N. R., Hezlett, S. A., & Ones, D. S. (2004). Academic performance, career potential, creativity, and job performance: Can one construct predict them all? *Journal of Personality and Social Psychology, 86,* 148-161.

Kuo, H. H. D., & Hauser, R. M. (1997). How does size of sibship matter? Family configuration and family effects on educational attainment. *Social Science Research, 26,* 69-94.

Kurtz-Costes, B. E., & Schneider, W. (1994). Self-concept, attributional beliefs, and school achievement: A longitudinal analysis. *Contemporary Educational Psychology, 19,* 199-216.

Kwesiga, C. J. (2002). *Women's access to higher education in Africa: Uganda's experience.* Kampala: Fountain publishers Ltd.

Kyllonen, P. C. (1996). Is working memory capacity Spearman's g? In I. Dennis & P. Tapsfield (Eds.), *Human abilities: their nature and measurement* (pp. 49-76). Mahwah: Erlbaum.

Laidra, K., Pullmann, H., & Allik, J. (2007). Personality and intelligence as predictors of academic achievement: A cross-sectional study from elementary to secondary school. *Personality and Individual Differences, 42(3),* 441-451.

Lal Biak Thanga (1978). *The Mizos: A Study in Racial Personality.* Gauhati: United Publishers.

Lao, R. C. (1980) Differential Factors Affecting Male and Female Academic Performance in High School. *The Journal of Psychology, 104,* 119-127.

Largotta, D. (2009). *Adolescents with attention deficit/Hyperactivity Disorder: WISC-IV working memory and processing speed indices.* Ph.D. Dissertation, University of Fairleigh Dickinson.

Lent, R. W., Brown, S. D., & Gore, P. A. (1997). Discriminant and predictive validity of academic self-concept, academic self-efficacy, and mathematics-specific self-efficacy. *Journal of Counselling Psychology, 44,* 307-315.

Leonard, D. K., & Jiang, J. (1999). Gender Bias and the College Predictors of the SATs: A Cry of Despair. *Research in Higher Education, 40,* 375-407.

Lever, J. (1976). Sex differences in games children play. *Social Problems, 23(4),* 478-487.

Lewis, J. D., & Knight, H. V. (2000). Self-concept in gifted youth: An investigation employing the Piers-Harris subscales. *Gifted Child Quarterly, 44,* 45-53.

Li, C. C. (1975). *Path analysis: A primer.* Pacific Grove, CA: Boxwood Press.

Lichtenwalner, J. S., & Maxwell, J. W. (1969). The relationship of birth order and socioeconomic status to the creativity of pre-school children. *Child Development, 40,* 1241-1247.

Lindert, P. (1977). Sibling Position and Achievement. *Journal of Human Resources, 12(2),* 198-219.

Lindert, P. H. (1978). *Fertility and scarcity in America.* Princeton, NJ: Princeton University Press.

Lippa, R. (1994). *Introduction to Social Psychology (2nd Ed.).* Pacific Grove, CA: Brooks/Cole.

Liu, W. C., & Wang, C. K. J. (2005). Academic Self-Concept: A Cross-Sectional Study of Grade and Gender Differences in a Singapore Secondary School. *Asia Pacific Education Review 2005, 6(1),* 20-27

LLyod, J. M. (1991). *History of the Church in Mizoram: Harvest in the Hills.* Aizawl, Mizoram: Synod Publication Board.

Loehlin, J. C. (2000). Group differences in intelligence. In R. J. Sternberg (Ed.), *Handbook of intelligence* (pp. 176-193). Cambridge: Cambridge University Press.

Lubart, T. I. (1994). Creativity. In R. J. Sternberg (Ed.), *Thinking and problem solving* (pp. 290-332). San Diego, CA: Academic Press.

Lubienski, S., T., & Lubienski, C. (2006). School Sector and Academic Achievement: A Multi-Level Analysis of NAEP Mathematics Data. *American Educational Research Journal, 43(4),* 651–698.

Lucht, W. E. (1963). *Creativity: A Study of Relationships.* Dissertation Abstract International, 24A, 4085.

Lynn, R. & Mikk, J. (2007). National differences in intelligence and educational attainment. Intelligence, 35, 115-121.

Lynn, R. (1959). Environmental conditions affecting intelligence. *Educational Research, 1,* 49-61.

Lynn, R. (1996). *Dysgenics: Genetic deterioration in modern populations.* Westport, CT: Praeger.

Lynn, R., & Van Court, M. (2004). New evidence of dysgenic fertility for intelligence in the United States. *Intelligence, 32,* 193-2002.

Lynn, R., Fergusson, D. M., & Horwood, L. J. (2005a). Sex differences on the WISC-R in New Zealand. *Personality and Individual Differences, 39,* 103-114.

Lynn, R., Raine, A., Venables, P. H., Mednick, S. A., & Irwing, P. (2005b). Sex differences on the WISC-R in Mauritius. *Intelligence, 33,* 527-533.

Maccoby, E. (1980). *Social development, psychological growth and the parent-child relationship.* New York: Harcourt Brace Jovanovich.

Mahale, M. N. (1978). *The Adolescents: Their Family Situation and Education* (pp. 251-253). New Delhi: S. Chand & Company Ltd.

Mahmodi, M. T. (1998). *Relationships between employment of mother, personality features, creativity and academic achievement among students.* University of educational teacher, Tehran, Iran.

Malsawmi, H. (2010). *Progress and Expansion of Education in Mizoram: An Analysis.* Aizawl, Mizoram (India): JP Offset Printers and Publishers.

Marjoribanks, K. (1974). Academic achievement: Family size and social class correlates. In K. Marjoribanks (Ed.), *Environments for learning.* Windsor, England: NFER Publishing.

Marjoribanks, K. (1976). Academic achievement, intelligence, and creativity: A regression surface analysis. *Multivariate Behavioural Research, 11,* 105-118.

Marjoribanks, K. (1978). Teacher perceptions of student behaviour, social environment, and cognitive performance. *Journal of Genetic Psychology, 133,* 217-228.

Marjoribanks, K., & Walberg, H. J. (1975). Birth order, family size, social class and intelligence. *Social Biology, 22,* 261-268.

Marsh, H, W., & Yeung, A, S, (1998), Top-down, bottom-up, and horizontal models: The direction of causality in multidimensional, hierarchical self-concept models. *Personality and Social Psychology, 75,* 509-527.

Marsh, H, W., & Yeung, A. S. (1997). Causal effects of academic self-concept on academic achievement: Structural equation models of longitudinal data. *Journal of Educational Psychology, 89,* 41-54.

Marsh, H. (1993). Academic self-concept: Theory, measurement, and research. In J. Suls (Ed.), *Psychological perspectives on the self* (pp. 59-98). Hillsdale, NJ: Erlbaum.

Marsh, H. W. & Parker, J. W. (1984). Determinants of student self-concept: is it better to be a relatively large fish in a small pond even if you don't learn to swim as well? *Journal of Personality and Social Psychology, 47,* 213-231.

Marsh, H. W. (1987). The big-fish-little-pond effect on academic self-concept. *Journal of Educational Psychology, 79,* 280-295.

Marsh, H. W. (1989). Age and sex effects in multiple dimensions of self-concept: Preadolescence to early adulthood. *Journal of Educational Psychology, 81,* 417-430.

Marsh, H. W. (1990a). The causal ordering of academic self-concept and academic achievement: a multiwave, longitudinal panel analysis. *Journal of Educational Psychology, 82,* 646-656.

Marsh, H. W. (1990b). A multidimensional, hierarchical self-concept: Theoretical and empirical justification. *Educational Psychology Review, 2,* 77-172.

Marsh, H. W. (2004). Negative effects of school-average achievement on academic self-concept: A comparison of the big-fish-little-pond effect across Australian states and territories. *Australian Journal of Education, 48,* 5-26.

Marsh, H. W. (2006). *Self-concept theory, measurement and research into practice: The role of self-concept in educational psychology.* Unpublished manuscript, British Psychology Society, 25th Vernon-Wall lecture.

Marsh, H. W. (2007). *Self-concept theory, measurement and research into practice: The role of self-concept in educational psychology.* Leicester, UK: British Psychological Society.

Marsh, H. W., & Craven, R. (1997). Academic self-concept: Beyond the dustbowl. In G. Phye (Ed.), *Handbook of classroom assessment: Learning, achievement, and adjustment* (pp. 131-198). Orlando, FL: Academic Press.

Marsh, H. W., & O'Mara, A. (2008). Reciprocal effects between academic self-concept, self-esteem, achievement, and attainment over seven adolescent years: Unidimensional and multidimensional perspectives of self-concept. *Personality and Social Psychology Bulletin, 34,* 542-552.

Marsh, H. W., & Shavelson, R. J. (1985). Self-Concept: It's Multifaceted, Hierarchical Structure. *Educational Psychologist, 20(3),* 107-123.

Marsh, H. W., Barnes, J., Cairns, L. & Tidman, M. (1984). Self-Description Questionnaire: age and sex effects in the structure and level of self-concept for pre-adolescent children. *Journal of Educational Psychology, 76,* 940-956.

Marsh, H. W., Byrne, B. M., & Shavelson, R. (1988). A multifaceted academic self-concept: Its hierarchical structure and its relation to academic achievement. *Journal of Educational Psychology, 80,* 366-380.

Marsh, H. W., Byrne, B. M., & Yeung, A. S. (1999). Causal ordering of academic self-concept and achievement: Reanalysis of a pioneering study and revised recommendations. *Educational Psychologist, 34(3),* 155-167.

Marsh, H. W., Craven, R. G., & Debus, R. (1998). Structure, stability, and development of young children's self-concepts: A multicohort-multioccasion study. *Child Development, 69,* 1030-1053.

Marsh, H. W., Ellis, L., & Craven, R. G. (2002). How do pre-school children feel about themselves? Unraveling measurement and multidimensional self-concept structure. *Developmental Psychology, 38,* 376-393.

Marsh, H. W., Kong, C. K., & Hau, K. T. (2001). Extension of the Internal/External Frame of Reference Model of Self-Concept Formation: Importance of Native and Non-native Languages for Chinese Students. *Journal of Educational Psychology, 93(3),* 543-553.

Marsh, H. W., Parker, J. W., & Smith, I. D. (1983). Preadolescent self-concept: its relation to self-concept as inferred by teachers and to academic ability. *British Journal of Educational Psychology, 53,* 60-78.

Marsh, H. W., Parker, J., & Barnes, J. (1985). Multidimensional adolescent self-concepts: their relationship to age, sex and academic measures. *American Educational Research Journal, 24,* 422-444.

Marsh, H. W., Trautwein, U., Lüdtke, O., Köller, O., & Baumert, J. (2005). Academic self-Concept, Interest, Grades, and Standardized Test Scores: Reciprocal Effects Models of Causal Ordering. Child *Development, 76(2),* 397-416.

Martens, P. L. (1981). *Socioeconomic Status, Family Structure and Socialization of Early Adolescent Children.* Stockholm: Project Metropolitan, no. 16.

Maruyama, G., Rubin, R. A., & Kingsberry, G. G. (1981). Self-esteem and educational achievement: Independent constructs with a common cause? *Journal of Personality and Social Psychology, 40,* 962-975.

Mashburn, A. J., Pianta, R. C., Hamre, B. K., Downer, J. T., Barbarin, O. A., Bryant, D., Burchinal, M., Early, D. M., & Howes, C. (2008). Measures of Classroom Quality in Prekindergarten and Children's Development of Academic, Language, and Social Skills. *Child Development, 79(3),* 732-749.

Matovu, M. (2012). Academic Self-Concept and Academic Achievement among University Students. *International Online Journal of Educational Sciences, 4(1),* 107-116.

Mayes, S. D., & Calhoun, S. L. (2007a). Learning, attention, writing, and processing speed in typical children and children with ADHD, autism, anxiety, depression, and oppositional-defiant disorder. *Child Neuropsychology: A Journal on Normal and Abnormal Development in Childhood and Adolescence, 13(6),* 469-493.

Mayes, S. D., & Calhoun, S. L. (2007b). Wechsler Intelligence Scale for Children-Third and -Fourth Edition predictors of academic achievement in children with attention-deficit/hyperactivity disorder. *School Psychology Quarterly, 22(2),* 234-249.

Mayesky, M. (1998). *Creative activities for young children (6th Edition).* Albany, NY: Delmar.

Mayhon, W. G. (1966). *The relationship of creativity to achievement and other student variables.* Dissertation Abstracts, 27(6A), 1713.

McArdle, J. J., Ferrer-Caja, E., Hamagami, F., & Woodcock, R. W. (2002). Comparative longitudinal multilevel structural analyses of the growth and decline of multiple intellectual abilities over the life-span. *Developmental Psychology, 38,* 115–142.

McCarty, S. A. (1924). *Children's drawings. A study of interest and abilities.* Baltimore: Williams & Wilkins.

McClelland, D. C. (1973). Testing for competence rather than for "intelligence". *American Psychologist, 28,* 1-14.

McGhee, P. (1997). Problem solving within the age group 5-14. *School Science Review, 79,* 103-1 10.

McGrew, K. S., & Flanagan, D. P. (1997). Beyond g: The impact of Gf-Gc specific cognitive abilities research on the future use and. *School Psychology Review, 26(2),* 189-210.

McMillan, J., & Western, J. (2000). Measurement of Social-Economic Status of Australian Higher Education Students. *Higher Education, 39(2),* 223-247.

Meador, K. S. (1992). Emerging rainbows: a review of the literature on creativity. Journal *for the Education of the Gifted, 15(2),* 163-181.

Meece, J. L., Parsons, J. E., Kaczala, C. M., Goff, S. B., & Futterman, R. (1982). Sex differences in math achievement: Toward a model of academic choice. *Psychological Bulletin, 91,* 324-348.

Mehana, M. (1997). *A meta-analysis of school mobility on reading and math achievement in the elementary grades.* Unpublished doctoral dissertation, Pennsylvania State University, University Park.

MehrAfza, M. (2004). *The relationship between child-rearing practices, creativity and academic achievement among students in high school, city of Tabriz.* Iran University of Tabriz, Tabriz.

Mehrotra, S. (1986). *A Study of the Relationship between Intelligence, Socio-Economic Status, Anxiety, Personality Adjustment and Academic Achievement of High School Students.* Ph. D thesis, Education, Kanpur University.

Mellou, E. (1996). Can creativity be nurtured in young children? *Early Child Development and Care, 119,* 119-130.

Memon, G. R., Joubish, M. J., & Khurram, M. A. (2010). Impact of Parental Socio-Economic Status on Students' Educational Achievements at Secondary Schools of District Malir, Karachi. *Middle-East Journal of Scientific Research, 6 (6),* 678-687.

Mercy, J. A., & Steelman, L. C. (1982). Familial influence on the intellectual attainment of children. *American Sociological Review, 47,* 532-542.

Mickelson, R. A. (1989). Why does Jane read and write so well? The anomaly of women's achievement. *Sociology of Education, 62(1),* 47-63.

Milne, B. G. (1972). *Creative artists in the classroom: Evaluation of the pilot program.* Vermillion, SD: Educational Research and Service Center.

Misra, M, (1986). *Critical Study of the Influence of Socio-Economic Status on Academic Achievement of Higher Secondary Students in Rural and Urban Areas of Kanpur*. Ph. D thesis, Education, Kanpur University.

Mizoram Economic Survey (2014-15). Planning & Programme Implementation Department (Research & Development Branch), Government of Mizoram.

Mohammadyari, G. (2013). Emotional Intelligence as Predictor of Academic Achievement among Gifted students. *Proceeding of the Global Summit on Education (GSE2013),* 11-12 March 2013, Kuala Lumpur.

Monastersky, R. (2005). Studies show biological differences in how boys and girls learn about math, but social factors play a big role too. *Chronicle of Higher Education, 51(26).*

Moran, J. D. (1990) *Creativity in young children, In ERIC/EECE Digests.* Urbana, IL: Eric Clearinghouse on Elementary and Early Childhood Education.

Morgan, C. T., King, R. A., Weisz, J. R., & Schopler, J. (1994). *Introduction to Psychology* (Third Reprint). New Delhi: Tata McGraw-Hill Edition.

Mouchiroud, C., & Lubart, T. (2002). Social creativity: A cross-sectional study of 6- to 11-year-old children. *International Journal of Behavioural Development, 26,* 60-69.

Muijs, R. D. (1997). Predictors of academic achievement and academic self-concept: a longitudinal perspective. *British Journal of Educational Psychology, 67,* 263-277.

Murphy, R. T., & (1973). Relationship among a set of creativity, intelligence and achievement measures in a high school sample of boys. *Proceedings of the 81st Annual Convention, American Psychological Association, USA, 81,* 631-632.

Musgrave, C. B. (2000). Environmental Factors Affecting Attitude towards Science and Mathematics. *Journal of Educational Psychology, 91(1),* 382-394.

Mushtaq, I. I., & Khan, S. N. (2012). Factors Affecting Students' Academic Performance. *Global Journal of Management and Business Research, 12(9),* 17-22.

Naderi, H, Abdullah, R., Tengku Aizan, H., Sharir. J., & Kumar, V. (2010b). Relationship between creativity and academic achievement: A study of gender differences. *Journal of American Science, 6(1),* 181-190.

Naderi, H., Abdullah, R., & Tengku Aizan, H. (2008). Male Versus Female Intelligence among Undergraduate Students: Does Gender Matter? *Asian Journal of Scientific Research, 1(5),* 539-543.

Naderi, H., Abdullah, R., Tengku Aizan, H., Sharir, J., & Kumar, V. (2009). Creativity, age and gender as predictors of academic achievement among undergraduate students. *Journal of American Science, 5,* 101-112.

Naderi, R., Abdullah, H., Tengku Aizan, H., Sharir, J., & Kumar, V. (2010a). Intelligence and academic achievement: an investigation of gender differences. *Life Science Journal, 7(1),* 181-190.

Nagoshi, C. T., & Johnson, R. C. (1985). Ethnic group-by-generation interactions in WAIS scores in the Hawaii Family Study of Cognition. *Intelligence, 9,* 259-264.

Nagoshi, C. T., & Johnson, R. C. (2004). Socioeconomic status does not moderate the familiality of cognitive abilities in the Hawaii Family Study of Cognition. *Journal of Biosocial Science, 00,* 1-9.

Nanyanjo, H. (2007). *Education inputs in Uganda: An Analysis of factors influencing learning Achievement in Grade Six.* World Bank Working paper N0. 98: Africa Human Development Series.

Nayak, M., & Mishra, H. C. (2012). Intelligence and Teacher's Rating of Creativity among Grade V Children: A Study of Gender Differences. *Journal of Education and Practice, 3(15),* 149-156.

NCERT (2005). *National Curriculum Framework (NCF), 2005*. Sri Aurobindo Marg, New Delhi: National Council of Educational Research and Training.

Neisser, U., Boodoo, G., Bouchard, T. J., Boykin, A. W., Brody, N., Cesi, S. J., et al. (1996). Intelligence: Knowns and unknowns. *American Psychologist, 51*, 77-101.

Nelson, M. J., Lamke, T. A., & French, J. L. (1973). *The Henmon-Nelson Test of Ability*. Riverside, C.A: Riverside Publishing.

Neto, F., Ruiz, F., & Furnham, A. (2008). Sex differences in self-estimation of multiple intelligences among Portuguese adolescents. *High Ability Studies, 19(2),* 189-204.

Newman, B. M. & Newman, P. R. (1983). *Development through Life: A Psychological approach* (3rd Ed.) Homewood, IL: Dorsey Press.

Newman, R. S. (1984). Children's achievement and self-evaluations in mathematics: A longitudinal study. *Journal of Educational Psychology, 76*, 857-873.

Niaz, M., de Nunez, G. S., & de Pineda, I. R. (2000). Academic performance of high school students as a function of mental capacity, cognitive style, mobility-fixity dimension, and creativity. *Journal of Creative Behaviour, 34*, 18-29.

Nisbet, J. D., & Entwistle, N. J. (1967). Intelligence and family size: 1949-1965. *British Journal of Educational Psychology, 37*, 188-193.

Niu, W., & Brass, J. (2011). Intelligence in worldwide perspective. In R. J. Sternberg & S. Kaufman (Eds.), *The Cambridge handbook of intelligence*. New York: Cambridge University Press.

Nori, Z. (2002). *Gender differences creativity, academic achievement (mathematics, sciences and language of literature) among high school in City of Shiraz, Iran*. University of Shiraz, Shiraz.

Nuss, E. (1961). *An Exploration of relations hips between creativity and certain Personal-Social variables among Eight Grade Pupils*. Unpublished Doctoral Dissertation, University of Maryland.

Nwosu, A. A. (2004). Teachers' awareness of creativity-related behaviours in the science classroom: Implication for national development. *Journal of Science Teachers Association of Nigeria, 39 (1&2),* 22-30.

Oakes, J., & Wells, B. (2002). *Keeping tack: How schools structure inequality*. New Haven: CT: Yale University Press.

Odebunmi, A. (1988). The Effect of Home Background on Students Academic Performance. *Nigeria Journal of Educational Psychology, 6(1),* 8-9.

OECD (2001). *Education at a Glance 2001: Organization for Economic Co-operation and Development (OECD) Indicators*. OECD Publishing.

Ogletree, E. (1971). A cross-cultural examination of the creative thinking ability of public and private school pupils in England, Scotland, and Germany. *Journal of Social Psychology, 83*, 301-302.

Okagaki, L., & Sternberg, R. J. (1993). Parental beliefs and children's school performance. *Child Development, 64*, 36-56.

Onocha, C. O. (1985). Pattern of Relationship between Home and School Factors and Pupils' Learning Outcomes in Bendel Primary Science Project. *Journal of Science Teachers Association of Nigeria (STAN), 23(1),* 56-63.

Orr, E., & Dinur, B. (1995). Social setting differences in self-esteem: kibbutz and urban adolescents. *Journal of Youth and Adolescence, 24*, 3-27.

Otis, A. S., & Lennon, R. T. (1967). *Otis-Lennon mental ability test*. New York: Harcourt, Brace & World.

Outhit, M. C. (1933). A study of the resemblance of parents and children in general intelligence. *Archives of Psychology, 149*, 1-60.

Owen, V. (1999): Exploring beliefs about academic performance achievement. *The Uganda Education Journal, 2, 57 New Vision*.

Palaniappan, A. K. (2000). Sex differences in creative perceptions of Malaysian students. *Perceptual Motor Skills, 91(3-1),* 970-972.

Pamela, E., & Davis-Kean, P. E. (2005). The Influence of Parent Education and Family Income on Child Achievement: The Indirect Role of Parental Expectations and the Home Environment. *Journal of Family Psychology, 19(2),* 294-304.

Parcel, T. L., & Menaghan, E. G. (1994). *Parents' jobs and children's lives*. New York: Aldine De Gruyter.

Parcel, T. L., Menaghan, E. G. (1990). Maternal working conditions and children's verbal facility: studying the intergenerational transmission of in equality from mothers to young children. *Social Psychology Quarterly, 53,* 132-147.

Parker, J. P. (1979). *The predictive validity of creativity and intelligence tests administered at age five.* Unpublished Dissertation Abstract International, 39A, 345.

Payne, R. S. (1994). The relationship between teachers' beliefs and sense of efficacy and their significance to urban low socio-economic status minority students. *Journal of Negro Education, 63,* 181-196.

Pearce, R. R. (2006). Effects of cultural and social structural factors on the achievement of white and Chinese American students at school transition points. *American Educational Research Journal, 43(1),* 75-101.

Pedrosa, R. H. L., J., Dachs, N. W., Maia, R. P., Andrade, C. Y., & Carvalho, B. S. (2006). *Educational and social economic background of undergraduates and academic performance: consequences for affirmative action programs at a Brazilian research university.* Presented at the IMHE/OECD General Conference, Paris, September 2006.

Peisner-Feinberg, E. S., Burchinal, M. R., Clifford, R. M., Culkin, M. L., Howes, C., Kagan, S. L., & Yazejian, N. (2001). The relation of preschool child-care quality to children's cognitive and social developmental trajectories through second grade. *Child Development, 72(5),* 1534-1553.

Peng, S. S., & Wright, D. (1994). Explanation of academic achievement in Asian American students. *Journal of Educational Research, 87(6),* 346-352.

Perkins, D. N. (1981). *The Mind's Best Work.* Cambridge, Massachusetts: Harvard University Press.

Perkins, R., Kleiner, B., Roey, S., & Brown, J. (2004). *The High School Transcript Study: A Decade of Change in Curricula and Achievement, 1990-2000.* Washington, DC: National Center for Education Statistics (NCES).

Perry, J. D., Guidubaldi, J., & Kehle, T. J. (1979). Kindergarten competencies as predictors of third-grade classroom behaviour and achievement. *Journal of Educational Psychology, 71,* 443-450.

Peterson, J. (1926). *Early conceptions and tests of intelligence.* Westford, CT: Greenwood Press.

Pfeffermann, P., & Landsman, V. (2011). Are private schools better than public schools? Appraisal for Ireland by methods for observational studies. *Annals of Applied Statistics, 5(3),* 1726-1751.

Phelps, L., McGrew, K. S., Knopik, S. N., & Ford, L. (2005). The general (g), broad, and narrow CHC stratum characteristics of the WJ III and WISC-III tests: A confirmatory cross-battery investigation. *School Psychology Quarterly, 20(1),* 66-88.

Piaget, J. (1975). *The child's conception of the world.* Totowa, NJ: Littlefield, Adams (Originally published in 1929).

Pianta, R. C. (1997). Adult-child relationship processes and early schooling. *Early Education and Development, 8,* 11-26.

Pianta, R. C. (1999). *Enhancing relationships between children and teachers.* Washington, DC: American Psychological Association.

Pianta, R. C., & Steinberg, M. S. (1992). Teacher-child relationships and the process of adjusting to school. *New Directions for Child Development, 57,* 61-80.

Pianta, R., Howes, C., Burchinal, M., Bryant, D., Clifford, R., Early, D., et al., (2005). Features of Pre-Kindergarten Programs, Classrooms, and Teachers: Do They Predict Observed Classroom Quality and Child-Teacher Interactions? *Applied Developmental Science, 9(3),* 144-159.

Piers, E. V., & Harris, D. B. (1964). Age and other correlates of self-concept in children. *Journal of Educational Psychology, 55(2),* 91-95.

Pind, J., Gunnarsdottir, E. K., & Johannesson, H. S. (2003). Raven's standard progressive matrices: New school age norms and a study of the test's validity. *Personality and Individual Differences, 34,* 375-386.

Pong, S. L. (1997). Sibship size and educational attainment in peninsular Malaysia: Do policies matter? *Sociological Perspectives, 40,* 227-242.

Post, D., & Pong, S. L. (1998). The waning effect of sibship composition on school attainment in Hong Kong. *Comparative Education Review, 42,* 99-117.

Pottebaum, S. M., Keith, T. Z., & Ehly, S. W. (1986). Is there a causal relation between self-concept and academic achievement? *Journal of Educational Research, 79,* 140-144.

Powell, B., & Steelman, L. C. (1989). The liability of having brothers: Paying for college and the sex composition of the family. *Sociology of Education, 62,* 134-147.

Powers, D. E., & Kaufman, J. C. (2004). Do standardized tests penalize deep-thinking, creative, or conscientious students? Some personality correlates of graduate record examination test scores. *Intelligence, 32,* 145-153.

Preckel, F., Holling, H., & Wiese, M. (2005). Relationship of intelligence and creativity in gifted and non-gifted students: An investigation of threshold theory. *Personality and Individual Differences, 40,* 159-170.

Price, J. (2008). Parent-Child Quality Time: Does Birth Order Matter? *Journal of Human Resources, 43(1),* 240-265.

Pryor, J., & Ampiah, J. G. (2003). *Understandings of Education in an African Village: The Impact of Information and Communication Technologies.* London: DFID.

Pullmann, H., & Allik, J. (2008). Relations of academic and general self-esteem to school achievement. *Personality and Individual Differences, 45(6),* 559-564.

Purkey, W. W. (1970). *Self-concept and School Achievement.* Englewood Cliffs, NJ: Prentice Hall.

Quek, S. I. (1988). *School social climate and the academic self-concept of Secondary three Normal course students.* Unpublished M.Ed. dissertation, National University of Singapore, Singapore.

RaisSaadi, R. H., Fooladi, A., Gholami, M. H., Javdan M., & Akasheh, Z. B. (2012). Investigation of the Relationship between Academic Self-concept, Achievement Motivation and Academic Achievement among a group of Iranian Students of Primary School. *Journal of Basic and Applied Scientific Research, 2(10),* 10225-10228.

Ramey, C. T., Ramay, S. L., & Lanzi, R. G. (2006). Children's health and education. In W. Damon & R. Lerner (Eds.), *Handbook of child psychology (6th Ed.).* New York: Wiley.

Ramey, S. L., & Ramey, C. T. (1994). The transition to school: Why the first few years matter for a lifetime. *Phi Delta Kappan, 76(30),* 194-198.

Rammstedt, B., & Rammsayer, T. H. (2002a). Gender differences in self-estimated intelligence and their relation to gender-role orientation. *European Journal of Personality, 16,* 369-382.

Rani, S. (1998). A Study of Public School Children's Psychological Development in Relation to Home Environment. *Journal of Indian Education, 27(1),* 16-23.

Raven, J. C., Court, J. H., & Raven, J. (1983). *Manual for Raven's progressive matrices and vocabulary scales (Section 3).* London: H. K. Lewis.

Raychaudhuri, A., Manojit, D., Sen, S., & Majumdar, B. G. (2010). Factors Affecting Students' Academic Performance: A case study in Agartala Municipal Council Area. *Bangladesh e-Journal of Sociology, 7(2),* 34-41.

Raykov, T. (2000). On the large-sample bias, variance, and mean squared error of the conventional non-centrality parameter estimator of covariance structure models. *Structural Equation Modelling, 7,* 431-441.

Raykov, T. (2005). Bias-corrected estimation of non-centrality parameters of covariance structure models. *Structural Equation Modelling, 12,* 120-129.

Reid, A., & Petocz, P. (2004). Learning Domains and the Process of Creativity. *Australian Educational Researcher, 31(2),* 45-62.

Reilly, J., & Mulhern, G. (1995). Gender differences in self-estimated IQ: The need for care in interpreting group data. *Personality and Individual Differences, 18,* 189-192.

Reynolds, M. R., Keith, T. Z., Ridley, K. P., & Patel, P. G. (2008). Sex differences in latent general and broad cognitive abilities for children and youth: Evidence from higher-order MG-MACS and MIMIC models. *Intelligence, 36(3),* 236–260.

Reynolds, W. M. (1988). Measurement of academic self-concept in college students. *Journal of Personality Assessment, 52,* 223-240.

Rickards, T. J. (1994). Creativity from a business school perspective: past, present and future. In S. G. Isaksen, M. C. Murdock, R. L. Firestien, & D. J. Treffinger (Eds.), *Nurturing and developing creativity: the emergence of a discipline* (pp. 155-176). Norwood, NJ: Ablex.

Rindermann, H., & Neubauer, A. C. (2004). Processing Speed, Intelligence, Creativity, and School Performance: Testing of Causal Hypotheses Using Structural Equation Models. *Intelligence, 32(6),* 573-589.

Rodgers, J. L. (1984). Confluence effects? Not here, not now! *Developmental Psychology, 20,* 321-331.

Rodgers, J. L. (2001). What causes birth order-intelligence patterns? The admixture hypothesis, revived. *American Psychologist, 56,* 505-510.

Rodgers, J. L., & Rowe, D. C. (1994). Birth-order, spacing and family size. In R. J. Sternberg (Ed.), *Encyclopaedia of intelligence* (pp. 204-209). New York: Macmillan.

Rodgers, J. L., Cleveland, H. H., van den Oord, E., & Rowe, D. C. (2000a). Birth-order and intelligence: Together for the last time? *American Psychologist, 55,* 523-524.

Rodgers, J. L., Cleveland, H. H., van den Oord, E., & Rowe, D. C. (2000b). Resolving the debate over birth order, family size, and intelligence. *American Psychologist, 55,* 599-612.

Roeper, A. (1977). The young gifted child. *Gifted Child Quarterly, 21,* 388-396.

Rohde, T. E., & Thompson, L. A. (2007). Predicting academic achievement with cognitive ability. *Intelligence, 35(1),* 83-92.

Rosenberg, M., & Pearlin, L. I. (1978). Social class and self-esteem among children and adults. *American Journal of Sociology, 84,* 53-77.

Rosenberg, M., Schooler, C., & Schoenbach, C. (1989). Self-esteem and adolescent problems: modelling reciprocal effects. *American Sociological Review, 54,* 1004-1018.

Rosenthal, R. (1991). Teacher expectancy effects: A brief update 25 years after the Pygmalion experiment. *Journal of Research in Education, 1,* 3-12.

Rothman, J. M. 2004. A Study of Factors Influencing Attitudes towards Science of Junior High School Students: Mexican-American pupils. *Journal of Research in Science Teaching, 66(1),* 40-54.

Rouse, C. (1998). Private School Vouchers and Student Achievement: An Evaluation of the Milwaukee Parental Choice Program. *Quarterly Journal of Economics, 113(2),* 553-602

Rowe, D. C., Jacobson, K. C., van den Oord, E. J. (1999). Genetic and environmental influences on vocabulary IQ: parental education level as moderator. *Child Development, 70,* 1151-1162.

Runco, M. (2004). Creativity. *Annual Review of Psychology, 55,* 657-687.

Runco, M. A. (1986). Predicting children's creative performance. *Psychological Reports, 59,* 1247-1254.

Runco, M. A. (1991). The evaluative, valuative, and divergent thinking of children. *Creativity Research Journal, 25,* 311-319.

Runco, M. A. (1999). A longitudinal study of exceptional giftedness and creativity. *Creativity Research Journal, 12,* 161-64.

Runco, M. A. (2003). Creativity, cognition and their educational implications. In J. C. Houtz (Ed.), *The educational psychology of creativity* (pp. 25-56). Cresskill, NJ: Hampton Press.

Runco, M. A., & Albert, R. S. (1986). The threshold theory regarding creativity and intelligence: An empirical test with gifted and non-gifted children. *Creative Child and Adult Quarterly, 11,* 212-218.

Runco, M. A., & Bahleda, M. D. (1986). Birth-order and divergent thinking. *Journal of Genetic Psychology, 148,* 119-125.

Runco, M. A., & Richards, R. (1997). *Eminent Creativity, Everyday Creativity and Health.* Norwood, NJ: Ablex.

Runco, M. A., Noble, E. P., & Luptak, Y. (1990). Agreement between mothers and sons on ratings of creative activity. *Educational and Psychological Measurement, 50,* 673-680.

Russ, S. (1993). *Affect and creativity: The role of affect and play in the creative process.* Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Sampson, D. (2004). *Academic performance, mental health and school factors.* Retrieved on July 3, 2008 from writing.byu.edu/honors_program/honors_150/contest/2004/sampsondonald.pdf.

Sanchez, F. J. P., & Roda M. D. S. (2003). Relationships between Self-Concept and Academic Achievement in Primary Students. *Electronic Journal of Research in Educational Psychology and Psychopedagogy, 1(1),* 95-120.

Sangkima (2004). *Essays on the History of the Mizos.* Spectrum Publications, Guwahati.

Santrock, J. W. (2007). *Child Development (11th Ed.).* New Delhi: Tata McGraw-Hill Edition.

Santrock, J. W. (2011). *Educational Psychology (4th Ed.).* New Delhi: Tata McGraw Hill Education Pvt. Ltd.

SarAbadani-Tafreshi, L. (2006). *The relationship between academic achievements, Self-Esteem and Gender with Anxiety of Computer among Postgraduate of Students in University of Tabeiyat Moallem Tehran.* University of Tabeiyat Moalem, Theran, Iran.

Saracho, O. N., & Spodek, B. (2007). Early childhood teachers' preparation and the quality of program outcomes. *Early Child Development and Care, 177(1),* 71-91.

Sattler, J. M. (2001). *Assessment of children: Cognitive applications (4th ed.).* San Diego: Jerome M. Sattler, Publisher, Inc.

Sattler, J. M. (2008). *Assessment of children: Cognitive foundations (5th Ed.).* San Diego, CA: Jerome M. Sattler, Publisher, Inc.

Sawyer, R. K. (2012). *Explaining creativity: The science of human innovation.* New York: Oxford University Press.

Sbarra, D.A., Pianta, R.C. (2001). Teacher Ratings of Behaviour among African American and Caucasian Children during the First Two Years of School. *Psychology in the Schools, 38(3),* 229-238.

Schunk, D. H., Pintrich, P. R., & Meece, J., L. (2008). *Motivation in education (3rd ed.).* Upper Saddle River, NJ: Pearson Merrill Prentice Hall.

Seifer, R. (2001). Socio-economic status, multiple risks, and development of intelligence. In R. J. Sternberg & E. L. Grigorenko (Eds.), *Environmental effects on cognitive abilities.* Mahwah, NJ: Erlbaum.

Sen, A. K., & Hagtvet, K. A. (1993). Correlations among creativity, intelligence, personality and academic achievement. *Perceptual and Motor Skills, 77,* 497-498.

Sentamu, N. P. (2003). School's influence of learning: A case of upper primary schools in Kampala & Wakiso Districts. *Uganda Education Journal, 4,* 25-41.

Serpell, R. (1974). Aspect of Intelligence in a developing country. *African Social Research, 17,* 576 -596.

Serpell, R. (1982). Measures of perception, skills and intelligence. In W. W. Hartup (Ed.), *Review of child development research (Vol.6.).* Chicago: University of Chicago Press.

Serpell, R. (2000) Culture and intelligence. In A. Kazdin (Ed.). *Encyclopaedia of psychology.* Washington DC, & New York: American Psychological Association & Oxford University Press.

Sewell, W. H., Hauser, R. M., & Wolf, W. C. (1980). Sex, schooling and occupational status. *American Journal of Sociology, 86,* 551-583.

Sharma, K. R. (2004). Effect of Early Home Environment on the Mental Development of Down Syndrome Infants. *American journal of mental deficiency, 85(1),* 39-44.

Shavelson, R. J., & Bolus, R. (1982). Self-concept: the interplay of theory and methods. *Journal of Educational Psychology, 74,* 3-17.

Shavelson, R. J., Hubner, J. J., & Stanton, G. C. (1976). Self-Concept: Validation of Construct Interpretations. *Review of Educational Research, 46(3),* 407-441.

Shin, S. H., & Jacobs, S. S. (1973). An analysis of the interrelationships among intelligence and multilevels of creativity and achievement. *Proceedings of the 81st Annual Convention, American Psychological Association,* USA, 81, 629-630.

Shipstead, Z., & Engle, R.W. (2013). Interference within the focus of attention: Working memory tasks reflect more than temporary maintenance. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 39(1),* 277-289.

Sierwald, W. (1989). *Creative hochbegabung-Identiflkation, entwicklung undforderung kreativer hochbegabter* (Creative talent: Identification, development, and demand). Paper presented at the 2nd Meeting of the Section Educational Psychology of the German Psychological Society.

Sigelman, C. K., & Rider, E. A. (2003). *Life-span human development (4th Ed.).* Belmont, CA: Wadsworth.

Silvia, P. J. (2008a). Another look at creativity and intelligence: Exploring higher-order models and probable confounds. *Personality and Individual Differences, 44,* 1012-1021.

Silvia, P. J. (2008b). Creativity and intelligence revisited: A latent variable analysis of Wallach and Kogan (1965). *Creativity Research Journal, 20,* 34-39.

Simon, B. S. (2000). *Predictors of High School and Family Partnerships and the Influence of Partnerships on Student Success.* Doctoral Dissertation, Johns Hopkins University.

Simonton, D. K. (1994). *Greatness.* New York: Guilford.

Singer, D. L., & Singer, J. (1990). *The house of make-believe.* Cambridge, MA: Harvard University Press.

Singh, K., Bickley, P. G., Keith, T. Z., Keith, P. B., Trivette, P., & Anderson, E. (1995). The effects of four components of parental involvement on eighth-grade student achievement: Structural analysis of NELS-88 data. *School Psychology Review, 24,* 299-317.

Skaalvik, E. M. & Hagtvet, K. A. (1990). Academic achievement and self-concept: an analysis of causal predominance in a developmental perspective. *Journal of Personality and Social Psychology, 58,* 292-307.

Skaalvik, E. M. & Rankin, R. J. (1994). Gender differences in mathematics and verbal achievement, self perceptions and motivation. *British Journal of Educational Psychology, 64,* 419-428.

Skaalvik, E. M. (1997). Issues in research on self-concept. In M. L. Maehr & P. R. Pintrich (Eds.), *Advances in motivation and achievement* (Vol. 10, pp. 51 -98). Greenwich, CT: JAI Press.

Sligh, A. C., Conners, F. A., & Roskos-Ewoldsen, B. (2005). Relation of creativity to fluid and crystallized intelligence. *The Journal of Creative Behaviour, 39,* 123-136.

Smith, G. & Carlsson, I. (1983). Creativity and anxiety: an experimental study. *Scandinavian Journal of Psychology, 24,* 107-115.

Smith, G. & Carlsson, I. (1985). Creativity in middle and late school years. *International Journal of Behavioural Development, 8,* 329-343.

Smith, G. J., & Carlsson, I. M. (1990). *The creative process: A functional model based on empirical studies from early childhood to middle age.* Madison, CT: International Universities Press.

Smith, I. L. (1971). I.Q., creativity and achievement: Interaction and threshold. *Multivariate Behavioural Research, 6,* 51-62.

Smith, J. R., Brooks-Gunn, J., & Klebanov, P. K. (1997). Consequences of living in poverty for young children's cognitive and verbal ability and early school achievement. In G. J. Duncan & J. Brooks-Gunn (Eds.), *Consequences of growing up poor* (pp. 132-189). New York: Russell Sage Foundation.

Smith, T. E. (1993). Growth in academic achievement and teaching younger siblings. *Social Psychology Quarterly, 56,* 77-85.

Snibbe, A. C., & Markus, H. R. (2005). You can't always get what you want: Educational attainment, agency, and choice. *Journal of Personality and Social Psychology, 88(4),* 703-720.

Solso, R. L. (1991). *Cognitive psychology (3rd Ed.).* Boston, MA: Allyn & Bacon.

Song, M. P., & Hattie, H. D. (2004). Home-School Relationship as they affect the Academic Success of Children. *Education and Urban Society, 16(2),* 333 - 347.

Sophie, P., Danielle, V. D. S., Dolan, C. V., de Geus, E. J. C., Colom, R., & Boomsma, D. I. (2006). Sex Different on the Dutch WAIS-III. *Intelligence, 34,* 273-289.

Spearman, C. (1927). *The abilities of man: Their measurement in nature.* New York: Macmillan.

Stas, J., & De Wever, H. (1985). Self-concept en school success: Emirsisch Onderzoek in het A.S.O. en Het T. S. O. Leuven, Licentiaatsverhandeling Pedagogische Wetenschappen K.U. Leuven Cited in R. D. Muijs. (1997). Symposium: self-perception and performance Predictors of academic achievement and academic self-concept: A Longitudinal perspective. *British Journal of Educational psychology, 67,* 263-277.

Statistical Handbook of Mizoram (2014). Department of Economics and Statistics, Government of Mizoram.

Steelman, L. C, & Mercy, J. A. (1983). Sex differences in the impact of the number of older and number of younger siblings on IQ performance. *Social Psychology Quarterly, 46,* 157-162.

Steelman, L. C. (1985). A tale of two variables: A review of the intellectual consequences of sibship size and birth order. *Review of Educational Research, 55,* 353-386.

Steelman, L. C., & Powell, B. (1989). Acquiring Capital for College: The Constraints of Family Configuration. *American Sociological Review, 54,* 844-855.

Steelman, L. C., & Powell, B. (1991). Sponsoring the Next Generation: Parental Willingness to Pay for Higher Education. *American Journal of Sociology, 96,* 1505-1529.

Stein, M. I. (1953). Creativity and culture. *Journal of Psychology, 36,* 311-322.

Stein, M. I. (1988). Creativity: The process and its stimulation. In F. Flach (Ed.), *The creative mind* (pp. 51-75). Buffalo, NY: Bearly Limited.

Steinberg, L., Lamborn, S. D., Dornbusch, S. M., & Darling, N. (1992). Impact of parenting practices on adolescent achievement: Authoritative parenting, school involvement and encouragement to succeed. *Child Development, 63,* 1266-1281.

Stephens, K. R., Karnes, F. A., & Whorton, J. (2001) Gender differences in creativity among American Indian third and fourth grade students. *Journal of American Indian Education, 40,* 124-132.

Stern, W. (1912). *Die psychologischen Methoden der Intelligenzprufung* [The psychological method of testing intelligence]. Leipzig: Barth.

Sternberg, R. J. (1985). *Beyond IQ: A triarchic theory of human intelligence.* New York: Cambridge University Press.

Sternberg, R. J. (1994). *In search of the human mind.* New York: Harcourt Brace.

Sternberg, R. J. (1997). A Triarchic View of Giftedness: Theory and Practice. In N. Coleangelo & G. A. Davis (Eds.), *Handbook of Gifted Education* (pp. 43–53). Boston, MA: Allyn and Bacon.

Sternberg, R. J. (2001). The Organization of Luo conception of Intelligence: A study on implicit theories in the Keyan village. *International Journal of Behavioural Development, 25,* 367-378

Sternberg, R. J. (2004). Culture and intelligence. *American Psychologist, 59(5),* 325-338.

Sternberg, R. J. (2005). Culture and measurement. *Measurement: Interdisciplinary Research and Perspectives, 3,* 108-113.

Sternberg, R. J. (2007). Who are the bright children? The cultural context of being and acting intelligent. *Educational Researcher, 36,* 148-155.

Sternberg, R. J., & Grigorenko, E. L. (2004). WICS: A model for selecting students for nationally competitive scholarships. In A. S. Ilchman, W. F. Ilchman, & M. H. Tolar (Eds.), Th*e lucky few and the worthy many: Scholarship competitions and the world's future leaders* (pp. 32-61). Bloomington, IN: Indiana University Press.

Sternberg, R. J., & Lubart, T. I. (1995). *Defying the crowd: Cultivating creativity in a culture of conformity.* New York: Free Press.

Sternberg, R. J., & Lubart, T. I. (1996). Investing in creativity. *American Psychologist, 51,* 677-688.

Sternberg, R. J., & O'Hara, L. A. (1999). Creativity and intelligence. In R. J. Sternberg (Ed.), *Handbook of Creativity* (pp. 251-272). New York: Cambridge University Press.

Sternberg, R. J., & O'Hara, L. A. (2000). *Intelligence and creativity: Handbook of Intelligence* (pp. 611-630). New York: Cambridge University Press.

Sternberg, R. J., Grigorenko, E. L., & Singer, J. L. (Eds.). (2004). *Creativity: From potential to realization.* Washington, DC: American Psychological Association.

Sternberg, R. J., Kaufman, J. C., & Pretz, J. E. (2001). The propulsion model of creative contributions applied to the arts and letters. *Journal of Creative Behaviour, 35(2),* 75-101.

Sternberg, R. J., Nokes, C., Geissler, W., Prince, P., Okatcha, F., Bundy, D. A., & Grigorenko, E. L. (2001). The relationship between academic and practical intelligence: a case study in Kenya. *Intelligence, 29,* 401-418.

Stewart, G. W. (1950). Can Productive Thinking be Taught? *Journal of Higher Education, 21,* 411-414.

Stieger, J. H. (1990). Structural Model Evaluation and Modification: An Interval Estimation Approach. *Multivariate Behavioural Research, 25(2),* 173-180.

Stoner, S., & Purcell, K. (1985). The concurrent validity of teachers' judgments of the abilities of preschoolers in a day care setting. *Educational and Psychological Measurement, 45,* 421-423.

Storr, A. (1991). *The dynamics of creation* (In Greek). (Translated by. B. Ksenos & A. Stoupaki). Athens: Kalvos.

Struthers, C. W., Menec, V. H., Schonwetter, D. J., & Perry, R. P. (1996). The effects of perceived attributions, action control, and creativity on college students' motivation and performance: A field study. *Learning and Individual Differences, 8(2),* 121-139.

Sulloway, F. J. (1996). *Born to rebel.* New York: Vintage.

Svanum, S., & Bringle, R.G. (1982). Race, social class, and predictive bias: An evaluation using the WISC, WRAT, and teacher ratings. *Intelligence, 6,* 275-286.

Taiwo, H. G. 1993. Family Environment and Educational Attainment of Some School Children in Western Nigeria. *Journal of the Science Teachers Association of Nigeria, 46 (2),* 107-116.

Tan, J. B., & Yates, S. M. (2007). A Rasch analysis of the Academic Self-Concept Questionnaire. *International Educational Journal, 8(2),* 470-484.

Tanpraphat, A. (1976). *A study of the relationship between creativity, academic achievement, scholastic aptitude, sex, and vocational interests of tenth grade Thai students.* Unpublished doctoral dissertation, University of North Colorado, Greeley.

Taylor, C. W. (1958). Variables related to Creativity and Productivity among men in two research Laboratories. Paper presented at the Second *Utah Creativity Research Conference on the identification of creative Scientific Talent.* Salt Lake City, University of Utah Press.

Teachman, J. D. (1987). Family Background, Educational Resources and Educational Attainment. *American Sociological Review, 52,* 548-57.

Teese, R. (2004). *Staying on at School: Improving Student Retention in Australia.* Centre for Post Compulsory Education and Life Long Learning, University of Melbourne.

Tegano, D. W., & Moran, J. D. (1989). Sex differences in the original thinking of preschool and elementary school children. *Creativity Research Journal, 2(1-2),* 102-110.

Tegano. D. W., Moran, J. D., & Sawyers, J. K. (1991). *Creativity in early childhood classrooms.* Washington, DC: National Education Association of the United States.

Temple, J. A., & Reynolds, A. J. (1999). School mobility and achievement: Longitudinal findings from an urban cohort. *Journal of School Psychology, 37 (4),* 355-377.

Terman, L. M. (1916). *The measurement of intelligence.* New York: Houghton Mifflin.

Terman, L. M., & Childs, H. G. (1912). A tentative revision and extension of the Bibet-Simon measuring scale of intelligence. *Journal of Educational Psychology, 3,* 61-74.

Terman, L. M., & Oden, M. H. (1947). *The gifted child grows up: Twenty-five years' follow-up of a superior group.* Oxford, England: Stanford University Press.

Terman, L. M., & Oden, M. H. (1959).T*he gifted group at mid-life: Thirty-five years' follow-up of the superior child.* Stanford: Stanford University Press.

The Gazette of India (2009). *Right of Children to Free and Compulsory Education Act.* The Gazette of India Extraordinary, No. 35 of 2009, Dated: New Delhi, Thursday, August 27, 2009.

The Right of Children to Free and Compulsory Act. (2009). *The Gazette of India,* Extraordinary, Pt. II, Sec. 3(ii) dated 19th February, 2010.

Therivel, W. A. (1998). Creative genius and the GAM theory of personality: Why Mozart and not Salieri? *Journal of Social Behaviour and Personality, 13,* 201-234.

Thienpont, K., & Verleye, G. (2003). Cognitive ability and occupational status in a British cohort. *Journal of Biosocial Science, 36,* 333-349.

Thomson, G. H. (1949). Intelligence and fertility: The Scottish 1947 survey. *The Eugenics Review, 41,* 163-170.

Thorndike, E. L. (1911). *Animal Intelligence.* New York: The Macmillan Company.

Thorndike, R. L., & Hegan, E. (1982). *Ten thousand Careers.* New York: Wiley.

Thurstone, L. L. (1938). *Primary Mental abilities.* Chicago: University of Chicago Press.

Thurstone, L. L. (1952). *Applications of psychology.* New York: Harper & Row.

Thurstone, L. L., & Jenkins, R. L. (1929). Birth order and intelligence. *Journal of Educational Psychology, 20(9),* 641-651.

Tooley, J., & Dixon, P. (2006). "De facto" privatization of education and the poor: Implications of a study from Sub-Saharan Africa and India. *Compare, 36(4),* 443-462.

Tooley, J., Bao, Y., Dixon, P., & Merrifield, J. (2011). School Choice and Academic Performance: Some Evidence from Developing Countries. *Journal of School Choice: Research, Theory and Reform, 5(1),* 1-39.

Torrance, E. & Aliotti, N. (1969). Sex differences in levels of performance and test retest reliability on the Torrance Tests of Creative Ability. *Journal of Creative Behaviour, 3,* 52-57.

Torrance, E. P. (1959). *Explorations in Creative Thinking in the Early School Year: VI. Highly Intelligent and Highly Creative Children in a Laboratory School.* Minneapolis: Bureau of Educational Research, University of Minnesota.

Torrance, E. P. (1960). *Educational Achievement of the Highly Intelligent and the Highly Creative: Eight Partial Replications of the Getzels-Jackson Study.* Minneapolis: Bureau of Educational Research, University of Minnesota.

Torrance, E. P. (1962). *Guiding creative talent.* Englewood Cliffs, NJ: Prentice Hall.

Torrance, E. P. (1963). *Education and the creative potential.* Minneapolis, MN: University of Minnesota Press.

Torrance, E. P. (1966a). *Thinking creatively with pictures.* Princeton, NJ: Personnel Press.

Torrance, E. P. (1968). *Education and the creative potential.* Minneapolis: University of Minnesota Press.

Torrance, E. P. (1974). *Torrance Tests of Creative Thinking: Norms/ technical manual.* Lexington, MA: Personnel Press.

Torrance, E. P. (1981). *Thinking creatively in action and movement.* Benesville, IL: Scholastic Testing Service.

Trautwein, U., Ludtke, O., Koller, O., & Baumert, J. (2006). Self-esteem, academic self concept, and achievement: How the learning environment moderates the dynamics of self concept. *Journal of Personality and Social Psychology, 90,* 334-349.

Tucker-Drob, E. M., Rhemtulla, M., Harden, K. P., Turkheimer, E., & Fask, D. (2010). Emergence of a Gene x socioeconomic status interaction on infant mental ability between 10 months and 2 years. *Psychological Science, 22,* 125-133.

Turkheimer, E., Haley, A., Waldron, M., D'Onofrio, B., & Gottesman, I. I. (2003). Socioeconomic status modifies heritability of IQ in young children. *Psychological Science, 14,* 623-628.

Tymms, P. (2001). A test of the big fish in a little pond hypothesis: An investigation into the feelings of seven-year-old pupils in school. *School Effectiveness and School Improvement, 12,* 161-181.

Ullman, J. B. (2001). Structural equation modelling. In B. G. Tabachnick & L. S. Fidell (2001). *Using Multivariate Statistics* (4th Ed., pp. 653-771). Needham Heights, MA: Allyn & Bacon.

UNICEF (2008). *Final Report of Socio-cultural and Economic Barriers to schooling in Southern Sudan.* Ministry of Education, Science & Technology, Government of Southern Sudan.

Urban, K. K. (1990). *Besonders begabte Kinder im Vorschulalter* (Gifted children in the preschool age). Heidelberg: HVA/Schindele.

Valentine, J. C., DuBois, D. L., & Cooper, H. (2004). The relation between self-beliefs and academic achievement: A meta-analytic review. *Educational Psychologist, 39,* 111-133.

Vandenberghe, V., &Robin, S. (2004). Evaluating the effectiveness of private education across countries: a comparison of methods. *Labor Economics, 11(4),* 487-506.

Vartanian, T. P., Karen, D., Buck, P. W., & Cadge, W. (2007). Early factors leading to college graduation for Asians and non-Asians in the United States. *The Sociological Quarterly, 48(2),* 165-197.

Verhoeven, J. C. & Beuselinck, I. (1995). *Towards Mass Tertiary Education in Flanders (Belgium): A Report for the OECD.* Leuven: K. U. Leuven, Department of Sociology.

Wainer, H., & Steinberg, L. S. (1992). Sex Differences in Performance on the Mathematics Section of the Scholastic Aptitude Test: A Bidirectional Validity Study. *Harvard Educational Review, 62,* 323-336.

Walker, D., Greenwood, C., Hart, B., & Carta, J. (1994). Predictions of school outcomes based on early language production and socioeconomic factors. *Child Development, 65,* 606-621.

Wallach, M. A., & Kogan, N. (1965). *Modes of thinking in young children: A study of the creativity-intelligence distinction.* New York: Holt, Rinehart & Winston.

Wang, C. (2010). Dropping out: Why are Students leaving junior high in China's poor rural areas? International *Journal on Education Development, 32(4),* 555-563.

Wang, J., & Wildman, L. (1995). An examination of effects of family commitment in education on student achievement in seventh grade science. *Journal of Research in Science Teaching, 32,* 833-837.

Warren, G. H., & Luria, Z. (1972). Evaluational set and creativity. *Perceptual Motor Skills, 1(2),* 436-438.

Watkins, D., & Astilla, E. (1987). Causal dominance among self-concept, locus of causality and academic achievement. *Journal of Psychology, 120,* 627-633.

Watkins, M. W., Lei, P. W., & Canivez, G. L. (2007). Psychometric intelligence and achievement: A cross-lagged panel analysis. *Intelligence, 35(1),* 59-68.

Wechsler, D. (1944). *The measurement of adult intelligence (3rd Ed.).* Baltimore: Williams & Wilkins.

Wechsler, D. (1949). *Manual for the Wechsler Intelligence Scale for Children (WISC).* San Antonio, TX: Psychological Corporation.

Wechsler, D. (1975). Intelligence defined and undefined: A relativistic appraisal. *American Psychologist, 30,* 135– 139.

Wechsler, D. (1979). *The psychometric tradition: Developing the Wechsler Adult Intelligence Scale.* Address presented at the 87th Annual Convention of the American Psychological Association,

Wechsler, D. (1981). *Manual for the Wechsler Adult Intelligence Scale.* New York: Psychological Corporation.

Wechsler, D. (2004). *WISC-IV technical and interpretive manual.* London: Harcourt Assessment.

Wechsler, D. (2005). *Wechsler Individual Achievement Test 2nd Edition (WIAT-II).* London: The Psychological Corporation.

Wechsler, S. (2006). Validity of the Torrance Tests of Creative Thinking to the Brazilian Culture. *Creativity Research Journal, 18(1),* 15-25.

Weinstein, R. S. (1989). Perceptions of classroom processes and student motivation: Children's views of self-fulfilling prophecies. In R.A. Ames & C. Ames (Eds.), *Research on motivation in education* (Vol. 3, pp. 187-222). San Diego, CA: Academic Press.

Wendy, J. B., & Thomas, J. (2007). Sex Different in mental abilities: G masks the dimensions on which they lie. *Intelligence, 35,* 23-39.

Wentzel, K. R. (1993). Does being good make the grade? Social behaviour and academic competence in middle school. *Journal of Educational Psychology, 85,* 357-364.

West, C. K., Fish, J. A., & Stevens, R. J. (1980). General self-concept, self-concept of academic ability and school achievement: implications for 'causes' of self-concept. *Australian Journal of Education, 24,* 194-213.

Westaway, M., & Skuy, M. (1984). Self-esteem and the educational and vocational aspirations of adolescent girls in South Africa. *South African Journal of Psychology, 14,* 113-117.

White, K. (1982). The relation between socioeconomic status and academic achievement. *Psychological Bulletin, 91,* 461-481.

Wichman, A. L., Rodgers, J. L., & MacCallum, R. C. (2006). A Multilevel Approach to the Relationship between Birth Order and Intelligence. *Personality and Social Psychology Bulletin, 32,* 117-127.

Wigfield, A., & Eccles, J. S. (1992). The development of achievement task values: A theoretical analysis. *Developmental Review, 12,* 265-310.

Wigfield, A., & Eccles, J. S. (1994). Children's competence beliefs, achievement values and general self-esteem. Change across elementary and middle school. *Journal of Early Adolescence, 14,* 107-138.

Wigfield, A., & Karpathian, M. (1991). Who am I and what can I do? Children's self-concepts and motivation in achievement situations. *Educational Psychologist, 26,* 233-261.

Wigfield, A., Battle, A., Keller, L. B., & Eccles, J. S. (2001). Sex differences in motivation, self-concept, career aspiration and career choice: Implications for cognitive development. In A. McGillicuddy-De Lisi, & R. De Lisi (Eds.). *Biology, society, and behaviour: the development of sex differences in cognition.* Westport, CT: Greenwood.

Wigfield, A., Eccles, J. S., Yoon, K.S., Harold, R. D., Arbreton, A. J. A., Freedman-Doan, C. & Blumenfeld, P. C. (1997). Change in children's competence beliefs and subjective task values across the elementary school years: A 3-year study. *Journal of Educational Psychology, 89,* 451-469.

Wigfield, A., Eccles, J.S., MacIver, D., Reuman, D.A., & Midgley, C. (1991). Transitions during early adolescence: Changes in children's domain-specific self-perceptions and general self-esteem across the transition to junior high school. *Developmental Psychology, 27, (4),* 552-565.

Wilberg, S., & Lynn, R. (1999). Sex Differences in Historical Knowledge and School Grades: A 26 Nation Study. *Personality and Individual Differences, 27,* 1221-1229.

Wilgenbusch, T., & Merrell, K. W. (1999). Gender differences in self-concept among children and adolescents: a meta-analysis of multidimensional studies. *School Psychology Quarterly, 14(2),* 101-120.

Williams, W. M., Blythe, T., White, N., Li, J., Gardner, H., & Sternberg, R. J. (2002). Practical intelligence for school: Developing metacognitive sources of achievement in adolescence. *Developmental Review, 22(2),* 162-210.

Willingham, D. T. (2012). Ask the Cognitive Scientist: Why Does Family Wealth Affect Learning? *American Educator, 36(1),* 33-39.

Wilson, M. P. (1968). *The relationship of sense of humour to Creativity, Intelligence and Achievement.* Unpublished Ph.D. Dissertation, University of Southern California.

Wiltfang, G. L., & Scarbecz, M. (1990). Social class and adolescents' self-esteem: another look. *Social Psycho1og.y Quarterly, 53,* 174-183.

Woodrow, H. (1946). The ability to learn. *Psychological Review, 53,* 147-158.

Worrell, F. C. (2007). Ethnic identity, academic achievement, and global self-concept in four groups of academically talented adolescents. *Gifted Child Quarterly, 51(1),* 23-38.

Wright, C. (1987). Nurturing creative potential: An interactive model for home and school. *Creative Child and Adult Quarterly, 12(1),* 31-38.

Wright, C., & Wright, S. (1986). A conceptual framework for examining the family's influence on creativity. *Family Perspective, 20,* 127-136.

Wylie, R. C. (1979). *The Self-concept (Vol. 2): Theory and Research on Selected Topics.* Lincoln: University of Nebraska Press.

Xin, L., & Zhang, L. (2009). Cognitive holding power, fluid intelligence, and mathematical achievement as predictors of children's realistic problem solving. *Learning and Individual Differences, 19,* 124-129.

Yamamoto, K. (1964a). Role of Creative Thinking and Intelligence in High School achievement. *Psychological Reports, 14,* 783-789.

Yamamoto, K. (1964b). A further analysis of the role of creative thinking in High-School Achievement. *The Journal of Psychology, 58,* 277-283.

Yamamoto, K. (1964c). A further analysis of the role of creative thinking in high school achievement. *Journal of Psychology, 58,* 277-283.

Yang, S., & Sternberg, R. J. (1997). Taiwanese Chinese conception of intelligence. *Intelligence, 25,* 21-36.

Yong, L. M. (1994). Relations between creativity and intelligence among Malaysian pupils. *Perceptual and Motor Skills, 79(2),* 739-742.

Younger, M., Warrington, M., & Williams, J. (1999). The Gender Gap and Classroom Interactions: Reality and Rhetoric? *British Journal of Sociology of Education, 20,* 325-341.

Zajonc, R. B. (1976). Family configuration and intelligence. *Science, 192,* 227 - 236.

Zajonc, R. B. (1983). Validating the Confluence Model. *Psychological Bulletin, 93,* 457-80.

Zajonc, R. B. (1986). Family Factors and Intellectual Test Performance: A Reply to Steelman. *Review of Educational Research, 56,* 365-71.

Zajonc, R. B., & Markus, H. (1975). Birth order and intellectual development. *Psychological Review, 82,* 74-88.

Zareh, H. (1994). *The relationships between achievement of motivation, self-esteem and gender among high school of students.* University of Tarbiyat Moalem, Tehran, Iran.

Zheng, R. C., & Xiao, B. L. (1983). A study of the creativity of high school students. *Acta Psychologica Sinica, 15,* 445-452.

Ziegler, M., Knogler, M., & Bühner, M. (2009). Conscientiousness, achievement striving, and intelligence as performance predictors in a sample of German psychology students: Always a linear relationship? *Learning and Individual Differences, 19 (2),* 288-292.

APPENDIX-I

DEMOGRAPHIC PROFILE SHEET

1. Name : _____
2. Age : _____
3. Locality : _____
4. Class : _____
5. Number of Elder sibling : _____
6. Number of Younger sibling : _____
7. Name of school : _____
8. Number of years in the school: _____ years
9. Educational qualification of parents:
   - Father: Under matric / HSLC / HSSLC / Graduate / Post graduate
   - Mother: Under matric / HSLC / HSSLC / Graduate / Post graduate
10. Profession :
    - Father: Govt servant / Daily Labourer / Private business / Stay-at-home dad
    - Mother: Govt servant / Daily Labourer / Private business / House-wife
11. Religious involvement:
    - Father: Highly involved / Moderately involved / Not involved
    - Mother: Highly involved / Moderately involved / Not involved
12. Social involvement :
    - Father: Highly involved / Moderately involved / Not involved
    - Mother: Highly involved / Moderately involved / Not involved
13. Number of family members: _____
14. Approximate monthly income of the family: _____
15. Phone number of Father / Mother / Caretaker: _____

APPENDIX-IIA

WECHSLER INTELLIGENCE SCALE FOR CHILDREN (WISC-IV)

*(*Wechsler, 2004*; London: Harcourt Assessment)*

DIGIT SPAN FORWARD

Say, '**I am going to say some numbers. Listen carefully, and when I am finished, say them straight after me. Just say what I say.'**

Item		Trial
1	Trial 1	2 - 9
	Trial 2	4 - 6
2	Trial 1	3 – 8 - 6
	Trial 2	6 – 1 - 2
3	Trial 1	3 – 4 - 1- 7
	Trial 2	6 – 1 – 5 - 8
4	Trial 1	8 –4 – 2 – 3 – 9
	Trial 2	5 – 2 – 1 – 8 - 6
5	Trial 1	3 – 8 – 9 – 1 – 7 - 4
	Trial 2	7 – 9 – 6 – 4 – 8 - 3
6	Trial 1	5 – 1 – 7 – 4 – 2 – 3 - 8
	Trial 2	9 – 8 – 5 – 2 – 1 – 6 - 3
7	Trial 1	1 – 8 – 4 – 5 – 9 – 7 – 6 - 3
	Trial 2	2 – 9 – 7 – 6 – 3 – 1 – 5 - 4
8	Trial 1	5 – 3 – 8 – 7 – 1 – 2 – 4 – 6 -9
	Trial 2	4 – 2 – 6 – 9 – 1 – 7 – 8 – 3 - 5

DIGIT SPAN BACKWARD

Say, '**Now I am going to say some more numbers, but this time when I stop, I want you to say them backward.'**

Item		Trial
1	Trial 1	2 - 1
	Trial 2	1 - 3
2	Trial 1	3 – 5
	Trial 2	6 – 4
3	Trial 1	5- 7 - 4
	Trial 2	2 – 5 - 9
4	Trial 1	7 – 2 – 9 - 6
	Trial 2	8 – 4 – 9 – 3
5	Trial 1	4 – 1 – 3 – 5 – 7
	Trial 2	9 – 7 – 8 – 5 - 2
6	Trial 1	1 – 6 – 5 – 2 – 9 - 8
	Trial 2	3 – 6 – 7 – 1 – 9 - 4
7	Trial 1	8 – 5 – 9 – 2 – 3 – 4 – 6
	Trial 2	4 – 5 – 7 – 9 – 2 – 8 – 1
8	Trial 1	6 – 9 – 1 – 7 – 3 – 2 – 5 – 8
	Trial 2	3 – 1 – 7 – 9 – 5 – 4 – 8 – 2

APPENDIX-IIB

WECHSLER INTELLIGENCE SCALE FOR CHILDREN (WISC-IV)

*(*Wechsler, 2004*; London: Harcourt Assessment)*

LETTER NUMBER SEQUENCING

The child is read a sequence of numbers and letters and recalls the numbers in ascending order and the letters in alphabetical order.

Item		Trial	Key	Response	Trial score	Item score
S	1	A-2	*2-A*			
	2	B-3	*3-B*			
1	1	A-3	*3-A*			
	2	B-1	*1-B*			
	3	2-C	*2-C*			
2	1	C-4	*4-C*			
	2	5-E	*5-E*			
	3	D-3	*3-D*			
3	1	B-1-2	*1-2-B*			
	2	1-3-C	*1-3-C*			
	3	2-A-3	*2-3-A*			
4	1	D-2-9	*2-9-D*			
	2	R-5-B	*5-B-R*			
	3	H-9-K	*9-H-K*			
5	1	3-E-2	*2-3-E*			
	2	9-J-4	*4-9-J*			
	3	B-5-F	*5-B-F*			
6	1	1-C-3-J	*1-3-C-J*			
	2	5-A-2-B	*2-5-A-B*			
	3	D-8-M-1	*1-8-D-M*			
7	1	1-B-3-G-7	*1-3-7-B-G*			
	2	9-V-1-T-7	*1-7-9-T-V*			
	3	P-3-J-1-M	*1-3-J-M-P*			
8	1	1-D-4-E-9-G	*1-4-9-D-E-G*			
	2	H-3-B-4-F-8	*3-4-8-B-F-H*			
	3	7-Q-6-M-3-Z	*3-6-7-M-Q-Z*			

APPENDIX-IIC

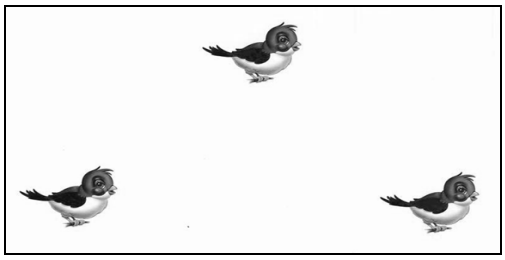
WECHSLER INTELLIGENCE SCALE FOR CHILDREN (WISC-IV)

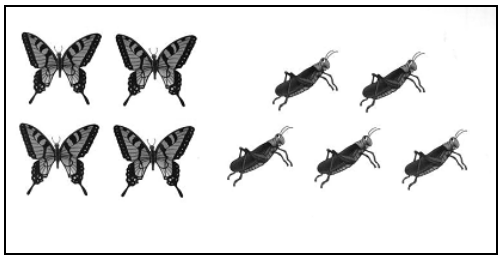
*(*Wechsler, 2004*; London: Harcourt Assessment)*

ARITHMETIC

The child mentally solves a series of orally presented Arithmetic problems within a specified time limit.

The items 1-5 are comprised of pictures from the stimulus book. Sample items are presented below:





6. How many are 2 Crayons and 3crayons?
7. Bob has 5 books. He loses 1.How many books does he have left?
8. Joe has 5 biscuits. He gives 1 to Sam and 1 to Jill. How many biscuits does he have left?
9. If I cut an Apple in half, how many pieces we I have?
10. John had 4 pennies and his mother gave him 2 more. How many pennies did he have altogether?
11. If you have 3 Pencils in each hand, how many pencils do you have altogether?
12. If you have 10 bars of chocolate and eat 3. How many bars would you have left?
13. Three Cars park in a car park that already has 12 cars. How many cars are in the Car Park altogether?
14. Mark has 8 marker Pens and he buys 6 more. How many marker Pens does he have altogether?
15. Frank earns 10 stickers on Monday and 15 Stickers on Tuesday. How many Stickers did he earn altogether?
16. Three cows are in a field. Four more cows come into the field and then two cows leave. How many cows are left in the field?
17. Jan buys 4 apples from one shop and 2apples from another. Her mother gives her 3 more. How many apples does she have altogether?
18. Kate has 12 Balloons and sells 5. How many balloons does she have left?

Cont…

19. Kim is watching 8 birds on the ground. Four birds fly away. Two other birds land. How many birds is she watching now?
20. Toms scores 17 points in one game and 15 in another game. How many points did he score altogether?
21. If you buy 2 pens at 40 pence each, how much change would you get back from 1 pound?
22. Sue earned 30 pounds and spent half of it. Magazine cost 5 pounds each. How many magazines can Sue buy with the money she has left?
23. A fair has 8 different contests. If each contest award three ribbons. How many ribbons are awarded at the fair?
24. Thirty students enroll in a karate class. After a week, 11 Student gave up. How many students are left in the class?
25. Rose brought 3 comics books for 2 pounds each and a toy for 7 pounds. How much change would she get back from a 20 pound note?
26. Jamal has twice has much money as Seth. Jamal has 17 pounds. How much money does Seth have?
27. A school has 25 students in each classroom. If there are 500 students in the whole school, how many classrooms are there?
28. Beth bought a used bicycle for two thirds of what it cost new. She paid 20 pounds. How much did it cost new?
29. A family drove for 3 hours, stopped to rest, and drove another 2 hours. They drove a total of 300 miles. What was their average driving speed?
30. The temperature rose 12 degrees between 4AM and 8AM. It rose 9 degrees between 8Am and 11AM. On the average, how many degrees did the temperature rise each hour?
31. A game that normally sells for 40 rupees is reduced by 15% during a sale. What is the price of the game during the sale?
32. Six people can wash 40cars in 4 days. How many people would it take to wash 40 cars in half a day?
33. Shane is coming home on a 2-hour flight. Jim lives 150 miles from the airport. He drives at 60mph.If Shane's flight leaves at 3PM, what time does Jim need to leave to be at the airport 30 minutes early?
34. Doug leaves work 1hour before Val. Doug drives 40 mph and Val drives 60mph. If they are both going in the same direction, how far ahead is Val 5 hour after Doug leaves?

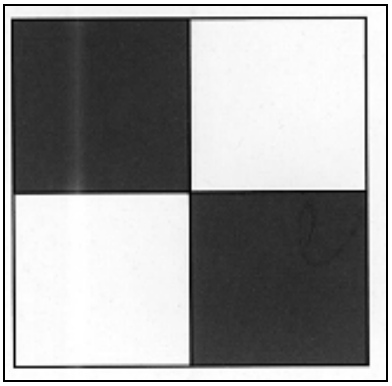
APPENDIX-IIE

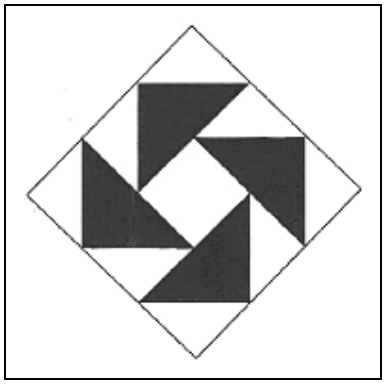
WECHSLER INTELLIGENCE SCALE FOR CHILDREN (WISC-IV)
*(*Wechsler, 2004*; London: Harcourt Assessment)*

BLOCK DESIGN

While viewing a constructed model or a picture in the Stimulus Book, the child uses red and white blocks to re-create the design within a specified time limit.

There are 14 stimuli in the Stimulus Book. Sample stimuli are presented below:





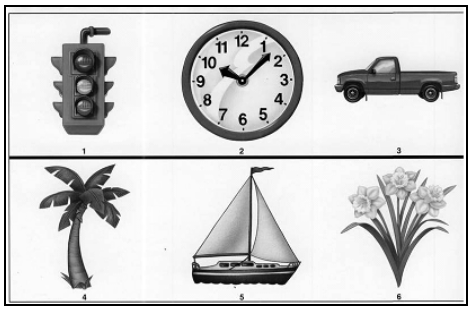
APPENDIX-IIF

WECHSLER INTELLIGENCE SCALE FOR CHILDREN (WISC-IV)
*(*Wechsler, 2004*; London: Harcourt Assessment)*

PICTURE CONCEPTS

The child is presented with two or three rows of pictures and chooses one picture from each row to form a group with a common characteristic.

There are 2 trial and 28 stimuli pictures in the Stimulus Book. Sample stimuli are presented below:



APPENDIX-IIG

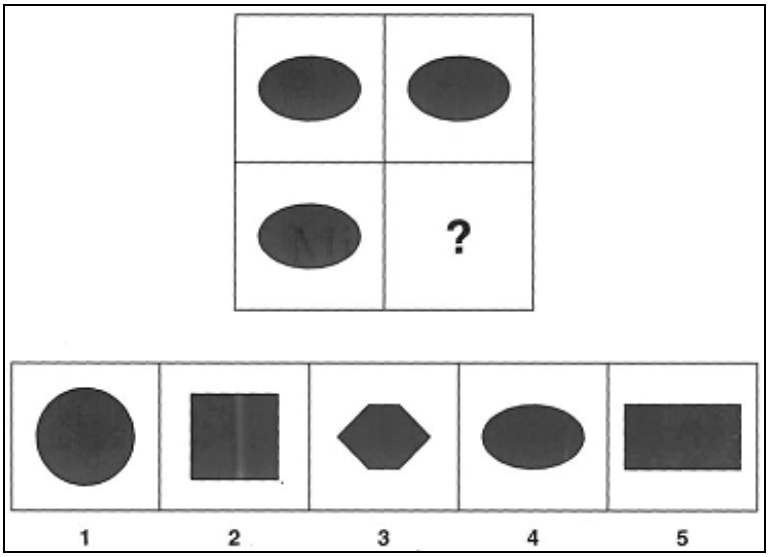
WECHSLER INTELLIGENCE SCALE FOR CHILDREN (WISC-IV)

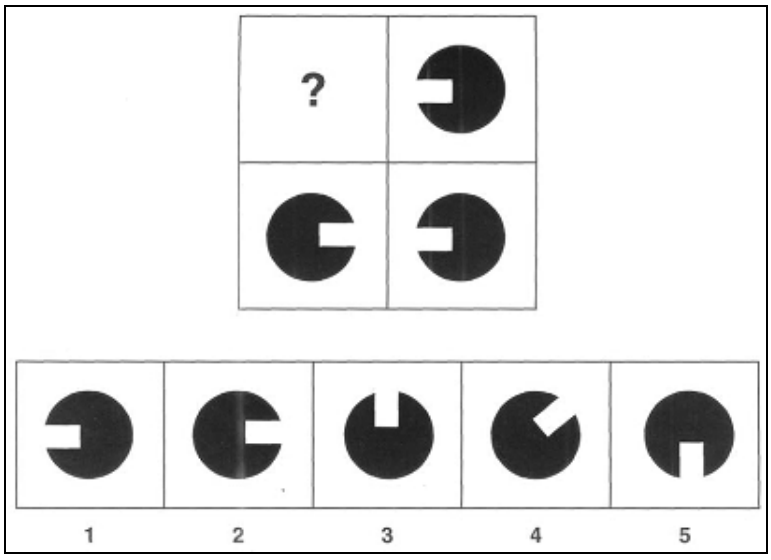
*(*Wechsler, 2004*; London: Harcourt Assessment)*

MATRIX REASONING

The child looks at an incomplete matrix and selects the missing portion from five response options.

There are 38 stimuli in the Stimulus Book. Sample stimuli are presented below:





APPENDIX-IIIA

THINKING CREATIVELY IN ACTION AND MOVEMENT (TCAM)

(Torrance, 1981; Bensenville, Illinois: Scholastic Testing Service, Inc.)

ACTIVITY ONE

(How many ways?)

Today, we are going to have a lot of fun moving in interesting ways. I want you to think up as many ways as you can to walk or run. Do you see this piece of red tape? We will start running or walking here, and we will go to the other side of the room until we get to the piece of yellow tape.

(walk between the two piece of tape with the child)

Now it is your turn to walk or run for me. Think up as many fun ways as you can. While you are moving I will sit here and write. You may begin now.

(Do not give hints but continue motivating the child to show as many ways as he can for getting across the room. List each one.)

1 …….

2 …….

3 …….

4 …….

5 …….

6 …….

7 …….

8 …….

9 …….

10 …….

Time: …….

APPENDIX-IIIB

THINKING CREATIVELY IN ACTION AND MOVEMENT (TCAM)

(Torrance, 1981; Bensenville, Illinois: Scholastic Testing Service, Inc.)

ACTIVITY TWO
(Can you move like?)

Now we are going to do some more fun things. This time we are going to pretend. Sometimes we pretend we are birds, elephants or horses. Other times we pretend we are throwing or catching a ball.

(Warm up by mimicking a bird flying, an elephant walking and throwing and catching a ball. Encourage the child to act with you.)

Now I am going to name several things and you can pretend that you are doing them. You don't have to tell me anything. You can just show me.

(Circle the number that corresponds with the child's response.)

1. Can you move like a tree in the wind? Imagine you are a tree and the wind is blowing very hard. Show how you would move.

   1 2 3 4 5
   No Movement Adequate Excellent like the thing

2. Can you move like a rabbit? Imagine you are a rabbit and somebody is chasing you. Show how you would hop.

   1 2 3 4 5
   No Movement Adequate Excellent like the thing

3. Can you move like a fish? Imagine you are a fish in a river or pond. Show how you would swim.

   1 2 3 4 5
   No Movement Adequate Excellent like the thing

4. Can you move like a snake? Imagine you are a snake crawling in the grass. Show how you would crawl.

   1 2 3 4 5
   No Movement Adequate Excellent like the thing

5. Can you move like you are driving a car? Imagine you are driving on the highway. Show how you would drive.

   1 2 3 4 5
   No Movement Adequate Excellent like the thing

6. Can you push an elephant? Imagine a big elephant is standing on something you want. Show how you would push him to make him move off the thing you want.

   1 2 3 4 5
   No Movement Adequate Excellent like the thing

Total Score: _____ Time: _____

APPENDIX-IIIC

THINKING CREATIVELY IN ACTION AND MOVEMENT (TCAM)
(Torrance, 1981; Bensenville, Illinois: Scholastic Testing Service, Inc.)

ACTIVITY THREE
(What other ways?)

Here is a cup like the ones you use to drink juice from. Can you put it in the waste basket? Show me how you would do it. (Pause). Good. Now let's see how many other ways you can put the cup in the waste basket. You don't have to say anything. Just show me. I have many cups and you can use as many as you want.

(List all responses. Accept verbal responses from children who are inhibited about acting.)

1._____ 6._____

2._____ 7._____

3._____ 8._____

4._____ 9._____

5._____ 10._____

Time: _____

APPENDIX-IIID

THINKING CREATIVELY IN ACTION AND MOVEMENT (TCAM)
(Torrance, 1981; Bensenville, Illinois: Scholastic Testing Service, Inc.)

ACTIVITY FOUR
(What can you do with a paper cup?)

You just thought of many ways to put a paper cup in the wastebasket. But sometimes you don't want to put your cup in a waste basket. Instead you might want to play with it or imagine that it is something else. Let's see how many different things you can do with this juice cup. Show me or tell me. I have many cups for you to use.

(List all response)

1._____ 6._____

2._____ 7._____

3._____ 8._____

4._____ 9._____

5._____ 10._____

Time: _____

APPENDIX-IV

ACADEMIC SELF-CONCEPT

(Developed for the study based on the works of Marsh et al., 1983; Fakhroo et al., 2008)

Name of Student: …….. Class: ……..…….. Age: …… School: …… **Give a tick mark (✓) in the appropriate box.**		**False**	**Partly True**	**True**
1	Sikul kai nuam ka ti *(I enjoy going to school)*	1	2	3
2	Kan zirlai zawng zawng zir nuam ka ti *(I like all the subjects in school)*	1	2	3
3	Lehkha chhiar hi awl ka ti *(I find reading easy)*	1	2	3
4	Lehkha chhiar hi nuam ka ti *(I enjoy reading)*	1	2	3
5	Lehkha ziah hi awl ka ti *(I find writing easy)*	1	2	3
6	Lehkha ziah hi nuam ka ti *(I enjoy writing)*	1	2	3
7	English subject hi awl ka ti *(I find English subject easy)*	1	2	3
8	Mizo subject hi awl ka ti *(I find Mizo subject easy)*	1	2	3
9	Mathematics subject hi awl ka ti *(I find Mathematics subject easy)*	1	2	3
10	Ka thianten min ngaina vek *(My classmates like me)*	1	2	3
11	Ka thiante ka ngaina vek *(I like all my classmates)*	1	2	3
12	Kan zirtirtute zawng zawng in min ngaina *(All my teachers like me)*	1	2	3

APPENDIX-V

PARENTS' RATING OF CHILDREN

(Developed for the study based on the works of Goldenberg et al., 2001; and Glick & White, 2004)

Name of Student: …….. Class: ……..…….. Age: …… School: …… **Give a tick mark (✓) in the appropriate box.**		**Strong Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1	English subject a thiam *(Very good in English)*	1	2	3	4	5
2	Mizo subject a thiam *(Very good in Mizo)*	1	2	3	4	5
3	Mathematics subject a thiam *(Very good in Mathematics)*	1	2	3	4	5
4	EVS subject a thiam *(Very good in EVS)*	1	2	3	4	5
5	Zirlai a man chak / A thiamthei *(Understand lessons quickly)*	1	2	3	4	5
6	Thil thar / zirlai thar zir a phur *(Keen to learn new lessons)*	1	2	3	4	5
7	Thil a chik / A dilchhut *(Curious and observant)*	1	2	3	4	5
8	A hriatna a hmang thiam *(Practical use of knowledge)*	1	2	3	4	5
9	Mahnia-a thil tih a thiam *(Acts by one's initiation)*	1	2	3	4	5
10	Mahni inrintawkna a nei \ha *(Has good self-confidence)*	1	2	3	4	5
11	Sports a thei *(Good in sports)*	1	2	3	4	5
12	Tih tur tha takin a hlen thin *(Performs tasks assigned well)*	1	2	3	4	5
13	Thian kawm a thiam *(Adapts well with friends)*	1	2	3	4	5
14	Ngaihtuahnaa hmang thiam *(Has good use of imagination)*	1	2	3	4	5
15	Midangte a ngaichang thiam *(Considerate to others)*	1	2	3	4	5

APPENDIX-VI

TEACHERS' RATING OF CHILDREN

(Developed for the study based on the works of Marsh & Yeung, 1997; and Friedel, Marachi & Midgley, 2002)

Name of Student: …….. Class: ……..…….. Age: …… School: …… **Give a tick mark (✓) in the appropriate box.**		**Strong Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1	English subject a thiam *(Very good in English)*	1	2	3	4	5
2	Mizo subject a thiam *(Very good in Mizo)*	1	2	3	4	5
3	Mathematics subject a thiam *(Very good in Mathematics)*	1	2	3	4	5
4	EVS subject a thiam *(Very good in EVS)*	1	2	3	4	5
5	Zirlai a man chak / A thiamthei *(Understand lessons quickly)*	1	2	3	4	5
6	Thil thar / zirlai thar zir a phur *(Keen to learn new lessons)*	1	2	3	4	5
7	Thil a chik / A dilchhut *(Curious and observant)*	1	2	3	4	5
8	A hriatna a hmang thiam *(Practical use of knowledge)*	1	2	3	4	5
9	Mahnia-a thil tih a thiam *(Acts by one's initiation)*	1	2	3	4	5
10	Mahni inrintawkna a nei tha *(Has good self-confidence)*	1	2	3	4	5
11	Sports a thei *(Good in sports)*	1	2	3	4	5
12	Tih tur tha takin a hlen thin *(Performs tasks assigned well)*	1	2	3	4	5
13	Thian kawm a thiam *(Adapts well with friends)*	1	2	3	4	5
14	Ngaihtuahnaa hmang thiam *(Has good use of imagination)*	1	2	3	4	5
15	Midangte a ngaichang thiam *(Considerate to others)*	1	2	3	4	5

DEPARTMENT OF PSYCHOLOGY
SCHOOL OF SOCIAL SCIENCES
MIZORAM UNIVERSITY
AIZAWL : 796004

PARTICULARS OF THE CANDIDATE

Name of Candidate	:	**Alice Lalchhandami Fanai**
Degree	:	**Doctor of Philosophy**
Department	:	**PSYCHOLOGY**
Title of dissertation:		**"Intelligence, Creativity and Self Concept as Predictors of Academic Performance amongst Mizo Children (6-8 years)"**
Date of admission	:	**03.08.2012**

APPROVAL OF RESEARCH PROPOSAL

1.	BOS	:	**18.04.2013**
2.	School Board	:	**22.04.2013**
	Registration No. and Date	:	**MZU/Ph.D/527 of 22.04.2013**
3.	Academic Council	:	**07.06.2013**
4.	Date of completion of Ph.D Course Work	:	**12.02.2013**
5.	Extension if any	:	**Nil**

(Dr. ZOKAITLUANGI)
Head,
Department of Psychology.