

**CREATIVITY AMONG SECONDARY SCHOOL STUDENTS:  
THE ROLE OF SCHOOL AND FAMILY SUPPORT**

**A THESIS SUBMITTED TO  
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*This Thesis is Dedicated to my Beloved Parents*

Smt. Sefali Rani Ghorai  
&  
Sri Rabindra Nath Ghorai

# CERTIFICATE

Certified that the thesis entitled “**Creativity Among Secondary School Students: The Role of School and Family Support**”, submitted by me for the Degree of Doctor of Philosophy in Arts (Education) at Jadavpur University is based upon my work carried out under the supervision of Dr. Lalit Lalitav Mohakud, Associate Professor, Department of Education, Jadavpur University and Dr. Mita Howladar, Associate Professor, Department of Education, Jadavpur University and that neither this thesis nor any part of it has been submitted before for any degree or diploma anywhere/elsewhere.

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## Abbreviations Used

ANOVA	: Analysis of Variance
CBSE	: Central Board of Secondary Education
CRC	: Creative Stimulation
DRC	: Doctoral Research Committee
df	: Degrees of freedom
F	: ANOVA
FE	: Family Environment
FS	: Family Support
IRB	: Institutional Research Board
M	: Mean
N	: Total Number of Participation
<i>P</i>	: Probability Value
PBL	: Project-based learning
PER	: Permissiveness
PSs	: Parenting Style
PI	: Parental Involvement
PSS	: Parenting Style Scale
PSu	: Parental Supervision
PTC	: Passi Test of Creativity
R	: Multiple Correlation
RAC	: Research Advisory Committee
REJ	: Rejection
SE	: School Environment
SEI	: School Environment Inventory
SS	: School Support
Sig.	: Significance
SD	: Standard Deviation
SPSS	: Statistical Package for the Social Sciences
Std. Error	: Standard Error
SES	: Socio-economic status
t	: t-test
TCT-DP	: Test of Creative Thinking-Drawing Production
TTCT	: Torrance Tests of Creative Thinking
WB	: West Bengal
WBBSE	: West Bengal Board of Secondary Education
$X^2$	: Chi-square Statistics

## **PREFACE**

This thesis is submitted to the Faculty of Arts, Jadavpur University, for the degree of Doctor of Philosophy in Arts (Education). I have completed this study under the supervision of Dr. Lalit Lalitav Mohakud, Associate Professor in the Department of Education at Jadavpur University, and Dr. Mita Howladar, Associate Professor in the Department of Education at Jadavpur University. I am really happy that I was able to submit this thesis under their supervision. I have included many of the remarkable new things I have found through this research in my thesis. I have made an effort to make this thesis interesting and easy to understand. In this study, I have investigated how school and family support could encourage creativity in secondary school students. I have divided this study into six chapters, each of which has a separate section. I presented the thesis in Chapter I (Introduction), where I also covered the concepts and theoretical perspectives of family support, school support, and creativity. To provide a theoretical perspective for the present research, I additionally emphasized the connections between those theories. I've provided a summary of the earlier studies in Chapter II, "Review of Related Literature". In Chapter III, 'Problem Statement,' I explained why this study was being done, outlined the research problem, addressed the research's objectives and hypotheses in detail, and described the area where this study was delimited. 'The Methodology of the Study' (Chapter IV) outlines the research design, locale of the study, participants, variables, data collection, analysis techniques, and ethical considerations. 'Analysis and Interpretation of the Data', Chapter V, contains the results and interpretations of my analysis. Lastly, I have provided the important findings and conclusion in Chapter VI, "Major Findings and Conclusions". To make conclusions, I analyzed them in light of the results of a previous study. I also discussed the limitations, educational implications, and recommendations for additional research in this chapter.

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(Research Scholar)

## ABSTRACT

Examining Creativity, School Support (SS) and Family Support (FS) among Secondary School Students has immense value and significance in today's world. Therefore, this study aims to determine the levels of SS and Family Support [in terms of Parental Involvement (PI) and Parental Supervision (PSu)] among secondary school students in West Bengal (W.B.). It also assesses the variations in SS, FS (in terms of PI and PSu), overall and dimension-wise creativity (fluency, flexibility and originality), verbal creativity and non-verbal creativity among the secondary school students in WB concerning the demographics (School Type, Class, Gender, Family Type, Number of Siblings, Father's Educational Qualification, Mother's Educational Qualification and Family Monthly Income). And also measure the influence of demographics on Parenting Style (PSs) among the secondary school students in WB. This study also explores the association between SS, FS (PI and PSu) and creativity. It determines the effects and predictive potential of SS, FS (PI and PSu) and combined effects and predictive potential of SS and FS (PI and PSu) in explaining the variations in overall and dimensions-wise creativity. It also finds out the moderating effect of FS (PSs) in the relationship between SS and creativity. Accordingly, hypotheses were formulated. For this study, the researcher followed quantitative descriptive research with a cross-sectional design. The study was conducted among 544 secondary school students from West Medinipur district in West Bengal, India. Data were randomly collected from 10 secondary schools from the two sub-divisions in the West Medinipur district. Data were collected using a demographic profile sheet, the 'Passi Test of Creativity' by Dr. B. K. Passi (2010), the 'School Environment Inventory' by Dr. Karuna Shankar Misra (2012) and the 'Parenting Style Scale' by Lamborn et al. (1991). The data were analysed using parametric and non-parametric statistical methods, including Pearson correlation, t-test, Chi-square test, ANOVA, Regression and Moderation analysis (Haye's regression) through SPSS. Results revealed that demographics such as gender, school type and mothers' educational qualifications significantly influence school support among secondary school students. However, family type, number of siblings, fathers' educational qualifications, and family monthly income do not significantly influence school support. The study also reveals that gender, school type and number of siblings significantly influence FS particularly PI, among secondary school students. However, family type, mother's educational qualifications, father's educational qualifications, and family monthly income do not

significantly influence family support among secondary school students. Additionally, gender, school type, mother's educational qualifications, father's educational qualifications, and family monthly income significantly influence parental supervision. Furthermore, gender, school type, mothers' educational qualifications, fathers' educational qualifications, and family monthly income significantly influence parenting style among secondary school students. Regarding creativity, mothers' and fathers' educational qualifications are a significant influence. Interestingly, school and family support significantly predict the variance in overall creativity among secondary school students. So, schools and policymakers should consider integrating creative activities into the curriculum, such as arts programs, project-based learning, and collaborative problem-solving programs to nurture creativity. Also, schools should communicate with parents and share strategies that will help develop and maintain a supportive environment inside and outside the classroom to maximize students' creativity. One of the study's major limitations was that it did not involve any other school boards, like ICSE and CBSE etc. So, this study could be undertaken by covering secondary level school students under all the affiliating boards like WBBSE, ICSE and CBSE or other boards and more districts.

**CHAPTER- I**  
**INTRODUCTION**

# CHAPTER-I

## INTRODUCTION

### 1.0. Introduction

Rapid changes and technological advances characterize modern society in the history of mankind. These changes are more rapid than in previous decades (Bhaskar & Kumar, 2024). Students need creative skills to thrive in the era of globalization (Astutik & Prahani, 2018). Creative thinking ability is more or less observed in all students. It is a psychological construct that is essential for the development of the entire nation as well as the individual unique development of a student. Creative ability for change and progress of society since time immemorial. This creative ability of humans is both inherited and acquired. In this context, the family and school environment play a decisive role in the expression of students' creative talents (Grabowska, 2024). Therefore, delving into the creativity, family and school support among secondary school students holds immense value and significance in today's context.

This chapter explains the concept of secondary level education and the developmental aspects of secondary school students. This chapter also offers an overview of creativity, school support, family support and particularly different Parenting Styles (PSs). Again, this chapter highlights the relationship and theoretical perspectives of creativity, family and school support.

### 1.1. Secondary Level: A Milestone in Every Student Life

The secondary level is a milestone that lays the foundation of a student's future life. It is a significant phase in a student's life which bridges basic education and higher education. This stage is not just an academic journey but a transformative period that shapes the various dimensions of an individual (Maroun, 2018). At this level, skills such as time management, critical thinking, creativity, decision-making and problem-solving are developed. At this level, their values develop, and their personality is formed (Le, 2024). They try to delve deeper into various topics. Furthermore, the secondary stage often coincides with adolescence, a period of significant physical and mental change (Ridley & Dollman, 2019). Families and schools are important in guiding students through these

changes (Stefa, 2016). It is a platform where students try to understand their role in society and start taking responsibility for their own actions.

### **1.1.1. Diverse Developmental Aspects of Secondary School students**

Secondary school students go through significant developmental changes that affect their overall development. Rapid physical and mental changes are observed at this level due to puberty. These changes affect self-esteem and confidence (Mohammed & Abdulsatar, 2022). Cognitively, students at this stage develop advanced reasoning, critical thinking, grasping abstract concepts, problem analysis, and the ability to think independently (Le, 2024). At this level, students experience heightened emotion regulation and mood swings as they struggle with identity formation and self-discovery (Jankowski, 2013). They often form close friendships and develop social skills. At this stage, various questions arise among students about social norms. They develop their own beliefs, morals and values (Van Der Leij et al., 2022). At this level, creativity is expressed through engaging in sports, arts and extracurricular activities.

### **1.2.0. Creativity: A Significant Developmental Aspects of Secondary School Students**

Creativity is an important developmental aspect during the middle school years, which builds students' ability to think creatively, solve problems, and express themselves appropriately (Zaveri et al., 2024). Growth in intelligence and emotional maturity is an important feature at this stage of life, which provides a fertile ground for the growth of creativity. At this level, students begin to think critically, explore abstract ideas, and come up with novel solutions to problems, which are important components of creativity (Madireddy & Paripally, 2022). Creativity allows students to express their emotions, ideas and experiences. They can express their creative thinking through art, music, writing or drama (Graefe & Omdal, 2022). Students at this level face a variety of complex academic and social challenges, which leads to innovative, constructive solutions through creativity. Schools help develop creativity by providing opportunities for projects, assignments and experiments. Creative activities often increase peer collaboration and interaction (Pitaloka & Muhid, 2024). It enables students to adapt to new technologies and contribute meaningfully to society, enabling them to thrive personally and professionally.

### **1.2.1. Concept and Nature of Creativity**

Creativity is one of the significant human capacities in general, reflecting new ideas, solutions and innovations (Sterling & Honig, 2000). Creativity is considered an invaluable resource of the human brain, which allows us to imagine the world differently. It is a powerful means of improving the human resources and quality of life needed in the 21st century (Oke et al., 2022). Creative children have the potential to work hard and come up with innovative solutions to some problems (Hon, 2012). As a result, the creative process often focuses on innovation, problem-solving, output, and qualified outcomes. In today's fast-changing world, creativity helps people to be innovative, which is important both personally and socially (Sokołowski, 2019). Therefore, developing and practising creativity is very important in every student's life.

Creativity is usually defined as the process of bringing about something novel and useful. The creation of original, innovative thoughts involving fundamental innovation or problem-solving and radical reformulation of problems (Dere, 2019). Creative genius is the history of creating talent in any field of human endeavour. It dissociates genius from the narrow-minded and low-level functioning of the academic mind, thereby opening the way for the broad and high-level functioning of multiple brainpower talents (Ghorai, Mohakud, & Howladar, 2024). Aristotle identifies creativity as the only factor that ensures human development. Creativity is a key competency for personal and social prosperity as people live in a creative age of information, communication and collaboration (Nejad et al., 2015). Vygotsky believed creativity arises from any human activity creating something new (Stoltz et al., 2015). Guilford is the most well-known thinker on creativity. Guilford established different dimensions for divergent thinking or creativity (Basadur & Gelade, 2002), inspired by Torrance's four key elements of creativity: fluency, originality, flexibility, and elaboration. In fluency, it refers to generating a large number of ideas or many alternative solutions to a problem. As for creativity, he said that creative people can generate ideas from different perspectives, which can easily change. As for novelty, he said that creative people would have the ability to produce unusual but appropriate ideas. Elaboration refers to the process of improving ideas by providing more details of an idea (Sterling & Honig, 2000). Creativity is vital to social and economic development as well as individual well-being. All people need to use the same cognitive processes to learn how to think creatively, but some people are more creative than others. In this case, various factors influence the development of this creative thinking skill.

### **1.2.2. Factors Affecting Creativity**

Creativity is a deep personality trait that is involved in generating new and original ideas and solutions (Lubart, 2001). Various factors influence creativity. In this case, environmental factors play a very important role. As such, in an open environment, children feel comfortable expressing their thoughts and ideas (Khalilolahi & Qaffari, 2015). Again, various personal characteristics, such as curiosity, self-confidence, mental flexibility, etc., influence creativity in different ways. Curiosity motivates people to learn and teaching discover new things, and confidence gives people the courage to express new ideas (Baas et al., 2013). Similarly, teaching methods and opportunities act as influencers in developing students' creativity. Innovative methods such as cooperative learning, problem-based learning, free-thinking exercises, etc., help enhance creativity (Mirsoatova, 2022). Also, physical and mental health significantly impact creativity (Ginis, Stewart, & Kronborg, 2022). Again, social and cultural influences also influence creativity in various ways. Creativity is also more common in societies that support diverse ideas (Smare & Elfatihi, 2024). The combined effect of all these factors on the development of creativity is a very complex process, which is most successful in a positive and stimulating environment. In this context, school and family support is important in developing creativity (Hanh et al., 2022), because children grow in the school and family environment.

### **1.3.0. School Support: As a Key Influencer of Student Creativity**

A key influencer in fostering and developing students' creativity is school support, which provides them with a platform for meaningful inquiry, innovation and self-expression. The hallmark of an ideal supportive school environment is that it provides a curriculum that emphasizes creative thinking (Moran, 2010). When students have the opportunity to explore topics independently, they develop critical thinking skills. In this regard, teachers play an important role. They provide an environment that recognizes curiosity, constructive feedback and creative endeavours in students (Nikolaishvili, 2023). Another important element in enhancing creativity is access to appropriate resources. Schools that provide students with the necessary equipment to realize their creative visions, i.e. laboratories, art studios, technology centers etc. Providing them with hands-on learning and opportunities to apply, are ideal for cultivating creativity there (Alfuhaigi, 2014).

Besides, participation in extracurricular activities such as sports, drama and music plays a significant role in nurturing students' creativity. Competitions, exhibitions and performances provide platforms for students to showcase their creativity and gain recognition (Putri & Irianto, 2023). Additionally, psychological support is essential to foster creativity. In schools that provide counselling services, students can develop creative abilities by overcoming stress and challenges (Cole & Sarnoff, 1980). This foundation made their educational experience more effective, boosted their creativity, and prepared them for the future.

#### **1.4.0. Family Support: As an Influential Factor of Student Creativity**

Family plays an important role in child development. From the moment he is born into the family, he begins to form his early experiences and philosophy of life. A healthy family environment is crucial for a child's future success (Ghorai, Mohakud, & Howladar, 2024). The importance of parents in understanding and nurturing the child's social and emotional skills is immense. The family primarily influences the child's thinking and interaction with others. This effect becomes stronger as children grow up and start school (Cancino & Mínguez, 2020). A caring and loving family provides a child with the security of physical needs and emotional support, fostering security and self-confidence, which are essential for his healthy emotional development (Bowlby, 1969). According to Thompson (2008), a strong early family bond develops better emotional regulation and social skills in children later in life. Family interaction and a supportive family always positively enhance a child's self-esteem and overall well-being (Conger & Donnellan, 2007). Families provide children with the first environment in which they learn or understand their emotions, which play an important role in forming thoughts, feelings, and relationships (Mammadov, 2022). The structure, safety, and well-being of their families are particularly influential in the development of children's emotional intelligence (Serebryakova & Dvoryantseva, 2022). Furthermore, as the family is unparalleled as the primary source of emotional, social and cognitive support, the family contributes significantly to imparting values, language and life skills. Similarly, family support is an influential factor in enhancing students' creativity (Kohanyi, 2011). An ideal nurturing family environment encourages children to explore ideas, express themselves independently and engage in creative activities. Parenting plays an important role in this. Those who provide their children with emotional stimulation, access to

creative resources and opportunities to explore stimulate their children's imagination and curiosity. In essence, parenting forms the basis for a child's overall development and shapes future prospects.

#### **1.4.1. Parenting is a Crucial Familial Factor**

Parenting is an important family factor that affects a child's overall development. It is a dynamic and vital force established as one of the most influential family factors in building a healthy society as a whole (Sanders & Turner, 2018). The role of parents extends beyond providing basic needs; They are the first teachers and examples for every human. A caring parenting style makes for a great place for kids to explore their interests. Conversely, neglectful Parenting can lead to emotional insecurity, behavioural problems, and difficulty forming relationships (Huang, 2024). Parents' active communication and actions with their children develop a positive attitude towards their thinking and life. Moreover, the family environment significantly influences the family's socioeconomic status, educational background and parents' emotional well-being as it influences their parenting style.

#### **1.4.2. Significance and Concept of Parenting Styles (PSs)**

Parents significantly shape a child's overall development. Parents' child-rearing styles significantly influence how well their children will develop cognitively (Bornstein, 2005). Parenting style is the method parents use to raise children. These include levels of warmth, responsiveness, control, and expectation toward their children. Parental involvement, and approach to parenting styles significantly affect academic performance, achievement, mood, psychological development, and creativity (Radhika & Joseph, 2013). Children's Creativity is greatly influenced by parenting style. A parent's style also affects a child's social and emotional development (Sommer, 2007). A child's warm, supportive relationship with his or her parents contributes to the child's pro-social behaviour. A positive relationship between parents makes the child emotionally stable, strong and secure. Again, strict rules and coercive parenting negatively affect this regard (Kaur & Ahmad, 2020). Authentic parenting positively influences the development of an extroverted personality, which implies the importance of the family parenting approach.

The term 'parenting', derived from the Latin word 'patio', meaning life-giver, encapsulates the unique bond between young children and devoted adults who are consistently present in their lives (Sing, 2024). It means being completely dedicated to

having a child. Parenting encompasses a rich tapestry of beliefs, attitudes, values and behaviours, which are important in shaping children's development (Wise & Da Silva, 2007). To understand the concept of parenting style, it is necessary to explain how parents want their children to behave and integrate into society. Darling and Steinberg (1993) emphasized the visible steps parents take to socialize children, as did Baumrind (1991), emphasizing the effective environment in which children grow up (Furnham & Cheng, 2000). This complex role significantly affects a child's self-concept, mental health and relationships with others. The role of parents is paramount in creating a caring home environment that encourages the child's positive psychosocial development (Platt, McFaul, & Tytherleigh, 2024). Hence, parenting aims to nurture the child's welfare through a combination of emotional climate, visible behaviour and strategic approach, which profoundly affects a child's self-esteem, mental health, peer interactions, social skills, academic success and overall well-being.

Extending Baumrind's (1966) classification of parenting styles, Maccoby and Martin (1983) present four types of Parenting Styles: authoritative, authoritarian, indulgent, and neglectful. Authoritative parents guide their children with warmth and firmness; they avoid using punishment for mistakes, appreciate small victories and build a strong relationship, which strikes a balance between high expectations and understanding. On the other hand, Authoritarian parents maintain strong control and discipline over children, focus on setting firm boundaries and expect mature behaviour without open dialogue (Baumrind, 1991; Sigelman & Rider, 2014). Again, a lenient approach and unevenly applied restrictions are some of the main characteristics of permissive parenting. They are more concerned with meeting children's needs than setting firm limits and exercising control. Neglectful Parenting reflects a parent's low responsiveness and demand for children. Their profound indifference to children's achievements or setbacks is noticeable (Darling & Steinberg, 1993). Interestingly, parenting is not a one-size-fits-all approach; parents must consider individual, cultural and social factors when nurturing their parenting strategies to meet their child's unique needs.

#### **1.4.3. Role of Different Parenting Styles (PSs) in Students Creativity**

It is important to understand how parenting can influence innovative thinking in children. Parental strictness or supervision can affect a child's creative abilities in various ways. A structured and supervised environment providing stability and focus is of utmost importance. It has been shown that children feel more secure when parents set clear rules

and expectations and are more likely to engage in creative activities (Sawyer, 2012). However, children's creativity is hampered by parental strictness and supervision. Because when parents have overparenting or perfectionistic hopes, it can generate a worry of failure in children, which may stifle their creativity (Lin et al., 2023). Additionally, when parents show lots of warmth and understanding, kids tend to be nicer to others and more creative. Parents are there to show that they care and give good feedback; it really helps children to be more creative. However, parental over-involvement stifles Creativity, but various studies show that involvement in school-related content actually helps children to be more creative, although over-involvement in everyday things may not be as helpful (Zheng et al., 2020).

Different parenting styles have a profound effect on various aspects of children's development, including their creativity. These four types of parenting styles (authoritative, authoritarian, indulgent, and neglectful) influence children's creativity in different ways. Parents with an authoritative parenting style maintain a close relationship with their children, have clear expectations for behaviour, and provide explanations for desired behaviour, which is helpful in showing a greater creative attitude in the child (Sigelman & Rider, 2009). Studies have shown that students with authoritative parents exhibit greater creative attitudes (Kim, 2023). In contrast, authoritarian parenting styles have unrealistic expectations of children. This style pays less attention to children's needs and relies more on punishment rather than discussion to solve problems (Sigelman & Rider, 2009). Studies have shown that authoritarian parenting hinders the development of creative thinking in children (Yuldasheva et al., 2021). Again, permissive parents do not set clear boundaries for their children's behaviour (Darling, 1999). Research by Watson et al. (2022) found that children of permissive parents exhibited better activity patterns, which is useful for increasing creativity in children. Additionally, neglectful parenting results in emotional distance between parents and children (Koerner & Maki, 2004). In this style, children experience rejection and loneliness. This type of indifference and neglect is associated with low levels of creativity (Yu et al., 2020).

### **1.5.0. Relationship between Creativity, School Support and Family Support**

Creativity is a mental process or skill that helps generate new and innovative ideas in various situations. Family and school support play a very important role in the development of creativity (Zhang et al., 2020). Sharing ideas with family members helps develop creativity. If the family encourages children's creative activities, they get a chance to express themselves easily (Beniwal & Singh, 2019). On the other hand, the encouraging, educational environment from school teachers helps students develop creative thinking. Because, school is an important place where students can participate in various creative activities as well as express their creativity (Vejian, Kamarudin, & Kadir, 2016). Therefore, family and school support plays an important role in the development of creativity. Children become innovative and creative members of society when both their families and schools support their creativity.

### **1.6.0. Theoretical Perspectives**

The theoretical framework describes diverse frameworks shaping creativity, family support, and school support. Understanding and improving children's school journeys can be helped by these points of view. A brief description of the relevance of these theories is presented in the following section.

#### **1.6.1. Theories of Creativity**

Guilford's (1950, 1967) framework of intelligence model, although primarily an intelligence theory, is very relevant to the field of creativity. Two of the thought processes suggested in this case were divergent and convergent thinking. The concept of divergent thinking is central to most creativity tests, such as the Torrance Test of Creative Thinking (Torrance, 1974, 2008). E. Paul Torrance is called the father of creativity. The Torrance Tests of Creative Thinking, first published in 1966 to assess creativity, have had a lasting impact on creativity research and education. According to him, creativity is not a single trait but a set of skills that can be developed and nurtured. Torrance believed that creativity involves both two-way thinking and one-way thinking. He describes four key components of creativity: fluency means being able to come up with many thoughts. Flexibility (the ability to approach problems from different

perspectives), originality (the ability to generate new ideas), and elaboration (the ability to add detail and complexity to ideas). There are several theories of creativity which uncover the underlying structure of creativity. Rhodes (1961) conducted an in-depth review of creativity and synthesized it into four primary categories, known as the Four P's: person, product, process, and press (i.e., environment). More recently, Glăveanu (2013) proposed a five framework of creativity. As this framework recognizes the "dual" nature of the environment (both social and material), it lends itself to the interrelationship between the various elements of Creativity. These Five A's focus on how individuals communicate together. The Four P's and Five A's theories explore the underlying structure of how creativity is enacted, but the four is a developmental trajectory that focuses more on the individual. This is an elaboration of the difference between Little-C (everyday Creativity) and Big-C (celebrity creativity). The first stage is mini-C creativity that is personally meaningful and new to the creator. One's creativity is developed through long-term deliberate practice and training to be considered a true creative professional or expert; this stage is called pro-C (Kaufman & Begetto, 2009).

Some theories focus on the components necessary for creativity, such as Amabile's component model of creativity (Amabile, 1983, 1996). In the original model, he posits three separate interrelated variables as key to creativity. The first was domain-relevant skills, which are technical skills and specific knowledge. Second, was creativity- relevant processes, which are broader, such as being tolerant of ambiguity and willing to take appropriate risks. Finally, task motivation includes intrinsic motivation that determines an individual's approach to a given task (Deci & Ryan, 1985). Another notable theory is the investment theory of creativity by Sternberg and Lubert (1995). According to this theory, there are six different elements that correspond to creative values. These are motivation, intelligence, knowledge, personality, thinking style and environment. Again, this concept is extended and developed by Sternberg (2018) in his triangular theory of creativity. He claims that creative people must not only defy the crowd but also defy their own beliefs and values.

A different theory is Unsworth's (2001) matrix model. This model suggests four types of creativity. First is responsive creativity, which involves doing a specific task for an extrinsic reason. Second, expected creativity is being asked to be creative; there is more freedom, but the impetus is still someone else. Third, contributory creativity is being engaged and interested but focused on a specific, often more narrow problem. Finally, proactive creativity is creating for your own reasons and to your own specifications.

Another prominent theory of the creative process is Mednick's (1962) associative theory, which emphasizes the ability to make connections between distant ideas or concepts. In this perspective, Glăveanu's (2015) perspective model recently proposed that we understand different perspectives on a situation or problem. Creativity is conceptualized in terms of dialogue between different perspectives and the ability to reflect one's perspective from another person's perspective.

### **1.6.2. Theories of School Support**

Most theories of school support describe ways in which schools can create supportive environments for student success. These theories generally focus on the emotional, academic, and social support aspects of the learning environment. In this context, Maslow's hierarchy of needs states that students must meet their basic needs before achieving academic success, which a supportive school environment plays an important role in fulfilling (Akhan, 2024). Again, Bronfenbrenner's ecological systems theory emphasizes the role of multidimensional influences, including family, school, and community; each affects student outcomes (Sofni, Lubis, & Lubis, 2024). Similarly, Vygotsky's social development theory emphasizes social interactions and support provided by teachers and peers (Pratheesh & Francis, 2024).

### **1.6.3. Theories of Family Support**

Family support is very important in the development of children's creative thinking. Without imposing excessive demands or expectations, parents should foster an environment in which children's emotional autonomy is established (Haim & Aschauer, 2024), which in turn promotes socialization (Inam et al., 2021). There are several theories in this regard, such as the attachment theory developed by Bowlby in 1969, which provides a model of parenting that emphasizes the exploration of emotional connections between children and their caregivers (Ecke et al., 2006). Again, Baumrind's theory of PS (1966) identified four components: responsiveness vs. responsiveness and demanding vs. unpredictable. Here three parenting styles emerge, which are - authoritative, authoritarian and permissive. According to this theory, authoritarian parents enforce strict rules without explanation, but authoritarian parents set clear expectations and value children's perspectives. Again, permissive parents provide freedom but rarely establish rules (Baumrind, 1991). Diana Baumrind's framework for parenting styles was extended by Lamborn and colleagues (1991) by adding a fourth style, which is neglectful (or uninvolved) parenting. As a result, four parenting styles are

found, namely- authoritative, authoritarian, permissive and neglectful (Kurniawan. 2023). On the other hand, Maccoby and Martin (1983) revised Baumrind's parenting style in the Handbook of Child Psychology to include two dimensions, which are responsiveness and demand. According to them, authoritative parents exhibit high responsiveness, while authoritarian parents prioritize demand over responsiveness. In this context, Robinson et al. (1995, 2001) described the empirical approach, which focuses on warmth and control behaviour (demand) from parents in pre-adolescent children. They characterized authoritative Parenting as the development of autonomy by allowing children to take responsibility for their schedules, activities, and thinking while maintaining a balance of behavioural control and parental affection. In contrast, authoritarian parenting emphasizes coercion, including verbal and physical punishment, and limited autonomy (Nelson et al., 2006). Another theory is Rohner's acceptance-rejection theory of parents where socialization has four important aspects to focus on, such as children's behavioural, cognitive, and emotional development and adult personality functioning (Hussain & Munaf, 2012).

## **CHAPTER-II**

# **REVIEW OF RELATED LITERATURE**

## **CHAPTER-II**

### **REVIEW OF RELATED LITERATURE**

#### **2.1.0. Introduction**

The literature review is essential to the research process because it gives a broad picture and critically analyses what is already known. As Fannon (2021) elucidates, it summarizes, analyzes, evaluates, and synthesizes relevant literature within a specific field, highlighting key theories, concepts, and research trends. It presents the research problem in its proper context, finds gaps in the research, and explains why the study is important. This enables researchers to engage effectively with the field and contribute substantially to academic discourse. This chapter establishes a robust research foundation, equipping researchers with insights into prior research findings, methodologies, and frameworks.

The literature study presented here in thoroughly explores creativity, school environment, family environment, and their interrelationships. Specifically, it investigates the role of school and family environments in fostering creativity among school students. This study focused on a wide variety of literature research to generate a thorough justification for the research questions and involvement of knowledge through a semi-systematic investigation.

#### **2.2.0. Objectives of the Present Literature Review**

The objectives of the present literature are:

1. To identify research gaps and gather sufficient information for the investigation.
2. Formulate research questions, outline the research problem, objectives, and hypotheses, and direct the research methodology.
3. To connect current research with broader field research, critical studies that align with the research problem being investigated must be identified.
4. To assist the researcher in conducting the research process and identifying this study's crucial components or demographic variables.
5. To assist the researcher in understanding the study's significance, applicability, connection with other studies, and pedagogical implications.

### 2.3.0. Methodology of the Present Literature Review

The researcher followed a semi-systematic and integrative literature review approach in the present study. The semi-systematic review approach is designed for topics that have been conceptualized differently and thoughtfully by different groups of researchers within diverse disciplines and that hinder a full systematic review process (Wong et al., 2013). When a systematic review is not feasible, a semi-systematic review can help synthesize research on a topic or how a topic has been studied in different fields (Snyder 2019). In the present literature review, the researcher first identified a few search terms, keywords, and phrases related to the selected research area and specified some online research databases to find out the available research literature (Wong et al., 2013). The literature search utilized widely recognized and reliable databases, including Google Scholar, ProQuest, ScienceDirect, Scopus, and Shodhganga.

To explore the themes of school environment and family environment in fostering students' creativity, various keywords were used: "Creativity", "School Environment", "Family Environment", "Creativity and School Environment", "Creativity and Family Environment", "Creativity and School and Family Environment", "Lower Secondary School", "Secondary School Students" and "Secondary School Students and Creativity". The researcher focused on literature published in English between 1999 and 2024 to ensure the inclusion of recent and relevant studies.

**Table No. 2.1. List of Selecting Literature**

<b>Databases</b>	<b>Papers and Thesis Downloaded</b>	<b>Selected</b>
Google Scholar	107	54
ProQuest	33	7
ScienceDirect	29	11
Scopus	62	14
Shodhganga	17	6
Total	248	92
<b>Finally Included</b>		<b>92</b>

### **2.3.1. Literature Selection Process**

The literature selection process is illustrated in Figure 2.1. delineates a semi-systematic approach to refining a substantial corpus of studies into a final selection for inclusion in the research. Initially, 248 studies were identified through comprehensive searches across databases such as Google Scholar, ProQuest, ScienceDirect, Scopus, and Shodhganga. After remove 52 duplicates, 196 studies remained.

In the subsequent phase, titles and abstracts were screened, reducing to 123 studies, with 73 records excluded for their irrelevance to the research focus. These remaining studies underwent a detailed full-text review, further narrowing the selection to 107 studies. Additional exclusions were made based on criteria such as non-relevance, non-English language, and lack of full-text availability. Ultimately, 92 studies were deemed highly relevant and included in the research. This rigorous screening process ensures that the included studies are of the highest quality and directly relevant to the research objectives, thereby establishing a solid foundation for the study.

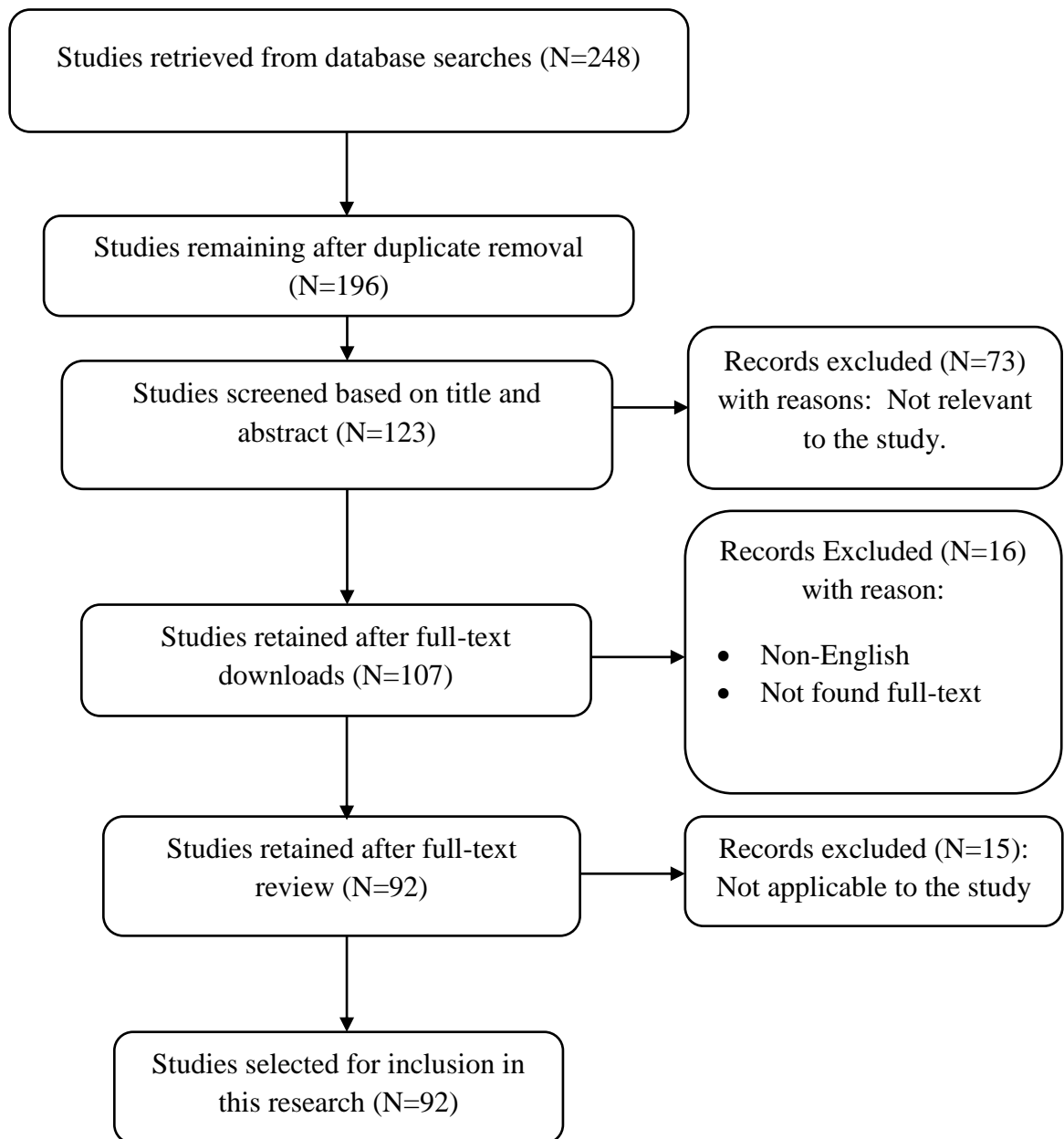


Fig. 2.1. Literature Selection Process

## **2.4.0. Review of Related Literature**

### **2.4.1. Studies on Creativity**

Several researchers studied creativity in secondary level school students' context, and the most relevant studies are discussed here. For example, Biswal et al. (2024) conducted a study on 1,400 higher secondary students from Western Odisha to explore the impact of creativity and parents' socio-economic status (SES) on academic achievement. The study found that creativity significantly improved academic performance, with variations observed across gender and rural-urban settings. High-SES parents had a more pronounced influence on their children's academic success compared to medium or low-SES parents. Additionally, the combined effect of creativity and SES demonstrated a medium-level influence on academic outcomes, with private school students out performing those in government schools. These findings highlight the intricate interplay of individual creativity and environmental aspects like SES in determining academic success. Similarly, Mourgues et al. (2016) also conducted a longitudinal study with 1165 seventh-grade students in the UK to investigate the predictive power of creativity, measured by Aurora Battery's five subtests, on academic performance. They discovered that a domain-general creativity factor, rather than domain-specific ones, best explained the data and significantly predicted General Certificate of Secondary Education (GCSE) scores four years later, independent of prior academic performance (Key Stage 2 results). Additionally, creativity mediated relationships between earlier and later academic outcomes, emphasizing its distinct and incremental value in predicting long-term academic success. Further, Gralewski and Karwowski (2012) examined the relationship between creativity and school grades among 589 high school students from Poland, using the Test of Creative Thinking-Drawing Production (TCT-DP) and Raven's Progressive Matrices to measure creativity and intelligence, respectively. They found no consistent correlation between creative abilities and GPA across schools, with variations observed: some schools showed positive relationships while others indicated negative or no relationships. They noted that creative abilities were more associated with GPA in larger schools and those located in metropolitan areas. Intelligence consistently predicted GPA, but creativity's impact was limited and context-dependent. In another study, Freund and Holling (2008) analyzed data from 1,133 students across 60 classrooms in Germany to examine the

role of creativity and reasoning skills in predicting grade point average (GPA). Using multilevel modelling, they found that reasoning ability was a stronger predictor of GPA than creativity, though creativity also had a significant positive effect. The analysis revealed that the effect of creativity on GPA varied across classrooms, suggesting that some teachers rewarded creativity more than others. One important thing that the study pointed out was how creativity can affect academic success depending on the teaching style and classroom setting. Also, Niaz et al. (2000) conducted a study with 141 high school students in Maturín, Venezuela, to examine how cognitive variables and creativity predict academic performance. Using the TTCT and measures like mental capacity, cognitive style, and mobility-fixity dimension, they found that mobility-fixity was the most consistent predictor of academic performance across multiple subjects, including Spanish, Geography, and Earth Science. Creativity significantly explained variance in Spanish, Geography, and Earth Science, indicating subject-specific effects. The results highlight that creativity and cognitive flexibility are related but represent distinct contributions to academic outcomes.

In another study, Adeyemo (2020) investigated the creativity levels of secondary school students in Lagos, Nigeria, within the framework of chemistry education. A cross-sectional study was conducted with a stratified random sample of 200 students. The findings revealed a significant positive correlation between students' creativity and their academic performance in chemistry. Schools adopting innovative teaching approaches demonstrated higher student creativity and better academic outcomes. Hands-on, experimental learning activities were particularly effective in enhancing students' creative abilities compared to traditional rote-learning methods. The main point of this study is that encouraging imagination in the teaching and learning process is very important for improving academic performance. Meanwhile, Arabac and Baki (2023) examined the mathematical creativity of 12 secondary school students (six gifted and six non-gifted) in Turkiye using problem-posing activities. The study analyzed students' creativity across indicators such as fluency, flexibility, and originality. Results showed that gifted students demonstrated higher flexibility and originality compared to their non-gifted peers, though no significant differences were found in fluency scores. The research highlighted that problem-posing activities effectively distinguish between the creativity of gifted and non-gifted students and suggested emphasizing originality and flexibility in assessing mathematical creativity. These findings underscore the

importance of tailoring educational strategies to nurture creative problem-solving in mathematics. Similarly, Van Harpen and Sriraman (2013) analyzed problem-posing abilities to examine mathematical creativity among 129 high school students in China and the USA. Participants posed problems in free, semi-structured, and structured geometric scenarios, with responses assessed for fluency, flexibility, and originality. Results indicated that Chinese students demonstrated greater diversity and complexity in their problem-posing, with Jiaozhou students outperforming others, possibly due to stronger mathematical foundations. However, all of the groups had trouble coming up with good, new ideas. The study highlighted the effect of curriculum and cultural factors on mathematical creativity, emphasizing the need to incorporate problem-posing into educational practices to enhance creativity. In another study, Suherman and Vidákovich (2022) systematically reviewed 70 journal articles to assess tools for measuring mathematical creative thinking (MCT) in educational settings. They analyzed the studies from four perspectives: educational levels, mathematical contexts, measurement tools, and reliability/validity evidence. They found that most assessments used open-ended questions, ethno-mathematics-based tests, and the Torrance Test of Creative Thinking (TTCT), with secondary schools being the predominant educational level studied. The review highlighted gaps, such as limited validity and reliability reporting and a need for more diverse MCT assessment tools tailored to various educational levels and contexts. Mann (2009) also conducted a study with 89 seventh-grade students in a Suburban Connecticut Middle School to explore factors influencing mathematical creativity. Using the Creative Ability in Mathematics Test (CAMT), the study examined variables such as mathematical achievement, attitudes towards mathematics, self-perception of creativity, gender, and teacher perceptions. Results showed that mathematical achievement was the strongest predictor, accounting for 23% of the variance in creativity scores, while attitudes, self-perceptions, and gender contributed an additional 12%. The study highlighted the challenges of identifying creative potential in mathematics, emphasizing the need for educational practices that foster creativity and problem-solving skills.

Interestingly, Ayishajuhi and Sreeletha (2019) conducted a survey on 300 higher secondary students in Kanyakumari district, India, to explore the relationship between scientific interest, creativity, and demographic factors. Using a normative survey design, the study found moderate levels of both scientific interest and creativity. There

were no significant differences in these variables based on locality, medium of instruction, type of school, or religion. However, significant differences were noted in terms of gender and family type, with females and students from joint families exhibiting higher levels of scientific interest and creativity. These results show how important it is to use focused teaching methods to spark students' interest in science and creativity. In another international study, Pham (2023) conducted a study on 89 Vietnamese secondary school students to investigate the relationship between creativity and grammatical acquisition in English as a Foreign Language (EFL) context. The study uses an alternative use task to measure creativity and a grammaticality judgment task to assess grammar acquisition. The results revealed no significant correlation between creativity and grammar learning. Additionally, sub-measures of creativity, including fluency, flexibility, originality, and elaboration, shows no relationship with grammar acquisition. The findings suggest that students who are not naturally creative can still effectively learn grammar. The study highlights the importance of task-based teaching methods to foster both creativity and language skills in interactive classroom environments. In a similar context, Rababah et al. (2013) conducted a study on 100 secondary school students in Irbid and Amman, Jordan, to measure their creativity in EFL writing using the TTCT. The study found that most students (65%) exhibited moderate creativity, with specific challenges in fluency and flexibility but higher levels of originality. The results emphasized the need for more targeted strategies and tools like ICT to enhance students' creative writing skills in EFL contexts. These findings underscore the significance of focusing on creativity dimensions-fluency, flexibility, and originality in educational reforms.

Cetinkaya (2023) examined the relationship between intelligence and creativity among 1,155 secondary school students in Turkey, focusing on the Threshold Theory. Using the WISC-R intelligence test and the Torrance Creative Thinking Test (TTCT), the study found a significant positive correlation between intelligence and creativity among students with "bright" intelligence (IQ 120–129). However, no significant relationship was detected for gifted (IQ 130–145) or profoundly gifted (IQ 146–160) students. The findings supported the Threshold Theory, suggesting that while creativity correlates with intelligence up to a certain level, this relationship diminishes as intelligence increases. These results emphasize that high intelligence alone does not guarantee high creativity. Interestingly, Parveen and Ramzan (2013) also conducted a study involving

100 high school students in Aurangabad, India, to investigate the relationship between creativity and the personality traits of introversion and extraversion. Using Baqar Mehdi's Creativity Test and Dr. Jai Prakash's Diagnostic Test for Introversion-Extraversion, they found no significant correlation between creativity and extraversion, while a moderate positive correlation was observed with introversion. The findings indicate that introverted students demonstrate a higher potential for creativity, and no significant difference exists between the overall creativity levels of introverts and extroverts. These results suggest the need to develop educational strategy that cater to the creative potential of introverted students. Meanwhile, Wang et al. (2021) conducted a study involving 418 school students in Beijing, China, to explore the relationship between regulatory focus, intrinsic/extrinsic motivation, and creativity. The research identified that promotion focus was positively associated with intrinsic motivation, which, in turn, positively affected creativity. Intrinsic motivation mediated the relationship between promotion focus and creativity, supporting the hypothesis that it is crucial in enhancing creative outputs. Contrarily, prevention focus and extrinsic motivation did not significantly influence creativity. The findings emphasize the importance of fostering intrinsic motivation and a promotion-oriented regulatory focus to cultivate creativity among adolescents.

Torrance (2010) investigated individual differences in creativity among secondary school students, analyzing how creativity varied across developmental stages and teaching methods. Using the Torrance Tests of Creative Thinking, the study found that overall creative growth stagnated during secondary school years, with little difference in mean creativity scores between 7th and 12th graders. However, notable variations were observed in students' creativity dimensions, such as fluency, flexibility, and originality. Torrance emphasized the need for personalized teaching approaches, highlighting that highly creative students thrived on challenging, open-ended tasks and independent study, unlike their less creative peers. This study underscored the importance of addressing creativity in education to foster individual potential. In the same context, Yonwong et al. (2024) conducted an action research study involving 31 eighth-grade students in Northeast Thailand to assess the effectiveness of a blended inquiry-based learning model incorporating four thinking activities (lateral, divergent, convergent, and aesthetic thinking) on creativity development. Using a two-cycle instructional approach and creativity assessments, the study found that students'

creativity scores increased significantly from 58.54% to 80% between cycles, surpassing the 70% requirement. The researchers also observed high student satisfaction with the teaching model, reporting a mean satisfaction score of 4.39 out of 5. These findings highlight the effectiveness of integrating thinking activities with inquiry-based learning in fostering creativity and engagement among secondary school students. In another study, Bedada Melka (2024) conducted a systematic review of 38 empirical studies published between 2013 and 2023 to explore methods for fostering and measuring creativity among secondary school science students. The review highlighted several effective teaching approaches, including project-based learning, inquiry-based learning, problem-based learning, and brainstorming, which enhanced students' creative abilities. The study also identified various tools for assessing creativity, such as the Torrance Tests of Creative Thinking (TTCT), scientific creativity tests, and performance-based evaluations. The findings underscore the critical role of innovative teaching methods and robust assessment tools in cultivating scientific creativity in high school education. There is more, Komalasari et al. (2024) conducted a quasi-experimental study involving 10th-grade students at SMAN 1 Grogol, Indonesia, to evaluate the effectiveness of the Problem-Oriented Project-Based Learning (POPBL) model in fostering creativity. The study used cluster random sampling to assign 30 students to the experimental group (POPBL model) and 30 students to the control group (conventional methods). Results showed that students in the POPBL group demonstrated significantly higher improvements in creativity, particularly in fluency, flexibility, originality, and elaboration, compared to the control group. The findings highlight the effectiveness of POPBL in enhancing student creativity by engaging them in real-world problem-solving and collaborative projects. Similarly, Kumar (2020) conducted a survey among 300 secondary students in Nagapattinam District, Tamil Nadu, India, to study the relationship between problem-solving ability and creativity. The findings revealed that students demonstrated a high level of problem-solving ability but only a moderate level of creativity. The study found no significant differences in problem-solving ability or creativity based on gender, school type, subject group, or family background. Additionally, there was no correlation between creativity and problem-solving ability. These results suggest the need for curriculum reforms and teaching strategies to foster students' creativity and problem-solving skills. In another study, Şener et al. (2015) conducted an experimental study with 50 seventh-grade students in Samsun, Turkey, to evaluate the impact of a science education project

on their creative thinking and attitudes toward science. The project utilized diverse teaching methods, including hands-on activities, laboratory experiments, outdoor learning, creative drama, and planetarium sessions over five days. Pre- and post-tests revealed significant improvements in students' attitudes toward science and their creative thinking levels. Both male and female students showed similar positive changes, and qualitative feedback highlighted the project's engaging and impactful nature. The study emphasized the effectiveness of integrating varied learning environments to foster creativity and enthusiasm for science.

Pont-Niclos et al. (2024) conducted a longitudinal quasi-experimental study involving 780 Spanish secondary school students to explore the relationship between scientific creativity, STEM-related attitudes, engagement, and career aspirations. The study revealed deficiencies in scientific creativity, particularly in originality and problem-finding abilities. Gender differences were noted, with girls outperforming boys in scientific creativity, perceptions of science, and aspirations for STEM careers. While students' perceptions of science improved across educational levels, engagement and willingness to pursue STEM careers declined. Positive correlations were found between engagement and career aspirations, highlighting the importance of fostering scientific creativity and engagement through targeted educational interventions and policies. In another study, Lou et al. (2017) conducted a quasi-experimental study involving 60 ninth-grade students in southern Taiwan to explore the effects of STEM project-based learning (PBL) on creativity. The six-week experiment integrated science, technology, engineering, and mathematics with hands-on activities centred on designing and building CaC2 steamships. The researchers identified five key stages of PBL preparation, implementation, presentation, evaluation, and correction that significantly enhanced students' creativity. They observed improvements in specific creativity traits such as adventurousness, curiosity, imagination, and the ability to embrace challenges. The study concluded that STEM PBL fosters both cognitive and affective aspects of creativity, emphasizing its potential to enhance students' problem-solving abilities and engagement with real-world applications.

In another international study, Zhang et al. (2023) conducted a cross-sectional study with 1555 high school students in eastern China to examine the impact of "sense of place" in classrooms on creativity and the mediating role of peer relationships. Their findings showed that a strong sense of place positively predicted creativity and fostered

positive peer relationships. Additionally, these relationships mediated the association between a sense of place and creativity. The study underscores the importance of cultivating emotional and environmental connections within classrooms to enhance students' interpersonal interactions and creative potential. Interestingly, Dung My Le et al. (2022) conducted a study on 108 high school students in Da Nang, Vietnam, to investigate the factors affecting their creativity. The study revealed that both subjective factors (such as students' interests, perspectives, and confidence) and objective factors (including the educational environment and teachers' behaviour) significantly influence creativity. Using a combination of questionnaires and a creative drawing test (TCT-DP), the research found no significant differences in creativity across gender, grades, and school type. However, specific aspects of creativity, like flexibility and elaboration, were found to vary depending on the educational setting and extracurricular opportunities. The authors emphasized that fostering a safe and open learning environment enhances intrinsic motivation and creative potential. Similarly, Jha (2012) conducted a study on 620 high school students from Gujarati medium schools in Ahmedabad, India, to examine the factors influencing creativity. The study defined creativity as a combination of fluency, flexibility, and originality and investigated its relationship with intelligence, achievement motivation, anxiety, self-concept, gender, and residential area. Using standardized tools and correlation analyses, the research found significant differences in creativity based on intelligence, anxiety levels, and self-concept. However, no significant differences were observed with respect to achievement motivation, gender, or area of residence. The findings highlighted positive correlations between creativity and self-concept, intelligence, and achievement motivation, while a negative correlation was found with anxiety. There is more, Kalogeratos et al. (2023) also conducted a narrative review of 11 studies from 1999 to 2023 to examine the factors influencing creativity in school environments. The research highlighted that creativity significantly impacts educational and personal growth. They found that teachers' expertise, classroom environments, and intrinsic student motivation were critical in fostering creativity. However, traditional approaches like rote memorization were identified as barriers. The study also revealed that integrating arts and problem-based learning into curricula effectively promoted creative thinking. The authors emphasized that prioritizing creativity in schools equips students to tackle complex challenges, advocating for systemic educational reforms to cultivate innovative thinking. In the same context, Van der Zanden et al. (2020) conducted a

systematic review of 65 studies to investigate factors that influence adolescent creativity, with a focus on the social context's role. They categorized factors into individual, parental, educational, and social contextual domains. Individual factors like intrinsic motivation and openness to experience were positively associated with creativity, whereas anxiety had a negative impact. Parental involvement, especially maternal support, enhanced creative thinking. Educational environments promoting autonomy, collaborative learning, and flexible activities supported creativity development. Notably, only 6% of the studies explicitly addressed the social context's influence, highlighting a research gap in understanding its impact on adolescent creativity. Niu (2007) also investigated the influence of individual and environmental factors on creativity among 357 Chinese high school students from Beijing and Nanjing. Using measures like divergent thinking tasks, creativity inventories, and self-reports, the study identified intelligence, intrinsic motivation, personality traits (e.g., openness and extraversion), and thinking styles as significant individual predictors of creativity. Environmental factors, including type of school, parental education, and autonomy-supportive parenting, were equally important in shaping creativity. Results revealed that intelligence and environment each explained about one-third of the variance in creativity, underscoring the interaction between personal and contextual influences. This study emphasized the critical role of cultural and environmental contexts in fostering creativity. In a similar context, Peng et al. (2013) conducted a study involving 913 Taiwanese junior high school students to explore how classroom goal structures influence creativity through self-determination motivations. Using structural equation modelling, they found that mastery-approach goal structures foster autonomous motivation, positively impacting creativity. Conversely, performance-avoidance structures were linked to controlled motivation but had no effect on creativity. Notably, mastery-avoidance and performance-approach goal structures positively influenced divergent production when mediated by autonomous motivation. These findings highlight the role of classroom environments and intrinsic motivations in enhancing creativity in educational settings.

Bolden et al. (2019) conducted a scoping review to explore the role of assessment in fostering creativity in K-12 classrooms, analyzing 51 peer-reviewed articles published in English. They identified two key themes: the necessity of clear criteria for assessing creativity and the value of self-assessment and reflection in promoting creativity. Their

findings suggest that while teachers may struggle with assessing creativity due to its perceived subjectivity, formative assessment approaches, including feedback and student reflection, hold significant potential to enhance creative learning. They advocate for policies and practices that integrate creativity assessment into pedagogical strategies and emphasize areas for further research, such as teacher training and the development of assessment frameworks. In another study, Vincent-Lancrin et al. (2019) conducted an international action research project across 11 countries to examine how creativity and critical thinking could be taught, learned, and assessed in primary and secondary schools. The study involved the development of teacher-friendly rubrics, lesson plans, and professional development strategies. Teachers tested these materials and provided feedback, leading to iterative improvements. The findings highlighted that fostering creativity and critical thinking in students could align with existing curricula and subjects, significantly enhancing teaching practices. The authors emphasized the need for professional support and resources to help educators integrate these skills into everyday teaching.

Baer (1999) conducted a series of four studies to investigate gender differences in the effects of extrinsic motivation on creativity among middle school and second-grade students in New Jersey. The research found that middle school girls' creativity was negatively impacted by the expectation of evaluation and working for rewards, whereas boys' creativity remained largely unaffected. The studies also revealed that girls anticipated feedback differently, with constructive feedback having a less detrimental impact but still reducing creativity compared to boys. In a study with second graders, boys' creativity increased under evaluation conditions, unlike girls. These findings highlight gender-specific responses to extrinsic motivators and suggest that such constraints may disproportionately inhibit girls' creative performance. Interestingly, Brinkman (1999) conducted a study with 32 high school music students to explore the effects of problem type (open vs. closed) and creativity style (adaptor vs. innovator) on musical composition creativity. Using the Kirton Adaption-Innovation Inventory to classify participants, students composed melodies under open and closed problem conditions. Compositions were evaluated by expert judges on originality, craftsmanship, and aesthetic value. The study found no significant differences in creativity scores based on problem type, creativity style, or interaction. These results supported the theory that adaption-innovation measures creativity style rather than level

but raised questions about its applicability to individual artistic creativity. In another study, Beghetto and Anderson (2022) proposed an action-oriented framework for "principled creativity" in education, emphasizing ethical and positive contributions through creative endeavours. They discussed how educators and students can identify meaningful creative opportunities, appraise risks, and evaluate outcomes to ensure ethical impact. The study also highlighted the role of fostering creative agency and sustaining culturally responsive approaches in classroom settings. They concluded that a principled approach can democratize creativity, making it accessible while addressing systemic inequalities and promoting positive societal change. In another international study, Zhang et al. (2022) investigated the relationships between parental responsiveness, teaching responsiveness, and creativity among 584 students in China. Using structural equation modelling, they found that both parental and teaching responsiveness positively correlated with student creativity. Moreover, creative self-efficacy was identified as a mediating factor, explaining how supportive behaviours from parents and teachers enhance creativity. The study emphasized the importance of warm, responsive interactions in fostering students' creative abilities and highlighted the potential of cultivating self-efficacy to further promote creativity. Also, Gralewski and Karwowski (2013) examined the accuracy of teachers' ratings of creativity among 589 Polish high school students aged 16–20. The study assessed creativity using multiple measures, including creative abilities, attitudes, and activities, alongside intelligence and school functioning. Teachers' ratings of creativity showed a weak but significant correlation with students' creative abilities and were more strongly influenced by school functioning, such as GPA and behaviour. Gender moderated the accuracy of ratings, with male students' creativity being more accurately recognized than females. The findings highlight potential biases in teacher perceptions and emphasize the need for better teacher training to identify and nurture creativity effectively. Hu and Adey (2002) developed a scientific creativity test for secondary school students to measure domain-specific creativity in science education. The test, informed by a three-dimensional model of scientific creativity, assessed fluency, flexibility, and originality across tasks such as problem-solving, product improvement, and imaginative scenarios. Administered to 160 students aged 12-15 in England, results revealed that scientific creativity increased with age and was associated with, but not dependent on, science ability. The study highlighted the importance of tailored

assessments to evaluate creativity within scientific contexts and emphasized the need for further test validation across diverse cultures and age groups.

Kim and Van Tassel- Baska (2010) conducted a study with 130 students from Korea, including 41 elementary and 89 high school students, to investigate the relationship between creativity and behaviour problems among underachieving students. Using three creativity measures and teacher-reported behaviour problem questionnaires, they found that underachieving students exhibited significant correlations between behaviour problems and creativity scores. The study highlighted that creative underachievers often face challenges in traditional educational settings due to a mismatch between their needs and the structured environment. The authors emphasized the importance of fostering creativity to promote academic and personal success while mitigating behaviour issues. Meanwhile, Lucas et al. (2013) conducted field trials in 12 schools in England to test a framework for assessing creativity in students aged 5 to 14. The framework, based on five creative dispositions: inquisitive, persistent, imaginative, collaborative, and disciplined, was designed to track creativity through formative assessment. Teachers and students used the tool to assess creative habits through specific examples and self-reflection. The study found that the framework enhanced teachers' ability to support creative development and helped students understand and articulate their creative processes. The authors concluded that assessing creativity is feasible and valuable, especially for formative purposes, though challenges remain in its implementation and scalability. Tan et al. (2008) examined the relationship between creativity, self-efficacy and emotions among 279 high school students in Singapore who participated in a three-to-five-day international service-learning program. Using scales for creativity self-efficacy, positive and negative effects, life satisfaction, and subjective happiness, they found that creativity self-efficacy positively correlated with positive effects, life satisfaction, and happiness while negatively correlating with negative mood. Participants reported increased life satisfaction and creative self-efficacy after the intervention. The study highlighted the potential of service-learning programs to enhance students' creative confidence and emotional well-being, emphasizing the value of positive, experiential learning environments. In another study, Zana-Sternfeld et al. (2024) conducted a narrative literature review to explore integrating artistic tools in fostering creativity, social-emotional learning, and meaningful educational experiences among students. They proposed the Empowering

Creative Education Model (ECEM), which consists of four developmental circles: "I" (self-awareness and personal growth), "Us" (social interaction and empathy), "Educational" (creative integration into academic settings), and "Community" (cultural and communal connections). The findings emphasized that creative environments enhance self-expression, academic success, and emotional well-being. The authors advocate for inclusive, art-based educational strategies to address diverse cultural and social backgrounds.

Several studies interplay demographic and environmental factors in shaping secondary-level students' creativity. For example, Arora and Kaur (2014) examined the effect of the school environment on the scientific creativity of 200 secondary school students in Delhi and NCR, India, through a comparative study between government and private schools. The study employed the Scientific Creativity Test by Majumdar and the School Environment Inventory by Mishra. They found a significant positive correlation between school environment dimensions, such as creative stimulation, cognitive encouragement, and scientific creativity. Private school students demonstrated higher scientific creativity levels than their government school counterparts. Additionally, a significant gender difference was observed, with girls outperforming boys in scientific creativity. These findings highlight the role of enriched school environments in fostering scientific creativity. In a similar context, Rao (2022) conducted a study on 120 secondary school students in Nalgonda District, India, using stratified random sampling to investigate creativity across dimensions like alternatives, uses, and similarities. The study revealed that creativity levels among students were average. It found no significant differences in creativity between rural and urban students or government and private school students. Similarly, boys and girls exhibited comparable creativity levels in most dimensions. The study emphasized the need for more educational focus on nurturing creativity in classrooms, highlighting the role of teachers and facilities in fostering creative development. In contrast, Sindhuja and Punitha (2018) conducted a survey with 350 IX standard students in Chennai district, India, to examine differences in creativity based on gender, medium of instruction, and type of school management. Using Baques Mehdis' Verbal Test of Creative Thinking, the study revealed that girls exhibited higher creativity levels than boys, English-medium students surpassed Tamil-medium students, and government-aided students outperformed government schools.

The findings highlighted significant disparities in creativity influenced by these demographic factors.

#### **2.4.2. Studies on School Support**

Runco et al. (2017) conducted a study on 254 Turkish students to identify why students seemed less creative while at school compared to when outside it. They used several statistics to understand personality traits, attitudes towards creativity, and the supports or barriers students felt at school. The findings showed a big difference: kids were way more creative outside of school. Factors like social preferences and personality traits helped explain this gap. One idea is that kids often have creative potential outside of class but can't show it in school since there's usually more structure and rules there. Similarly, Niu and Sternberg (2003) studied Chinese students to see how society and schools affect creativity. They found that students' creativity levels increased when they got direct instructions on creativity. Three factors were suggested for why Chinese students might rate their creativity differently from American students: social values, teaching methods, and testing systems. They had some solid suggestions to help students be more creative. In another study, Dai et al. (2012) also looked at how social and educational settings affect creativity during the teenage years. They compared students' creativity from two very different school districts: one in a nice suburban area and another in an urban area with many families living under the poverty line. Their results showed a clear creativity gap between the two groups. They even found that academic success and motivation played a part in this gap, suggesting that there are ways to tackle this issue. Further, Khalid et al. (2020) conducted a quasi-experimental study on 172 students from four Gombak District, Malaysia schools. They focused on how learning math in school through creative problem-solving could change students' creativity and problem-solving skills. The results showed significant improvements across most areas of creativity and problem-solving tests. In parallel, Raturi and Bhandari (2022) explored the impact of creativity on traditional teaching methods compared to blended learning systems in enhancing classroom instruction and improving the teaching-learning process. Their findings revealed that traditional methods predominantly emphasized examinations and results, whereas blended learning nurtured creativity through problem-solving and the adoption of innovative digital tools. The study emphasized that creative classrooms enhance students' critical thinking, independence, and confidence, thereby making learning more engaging and

effective. They advocated for incorporating creativity into all facets of education and restructuring curricula and teacher training programs to foster creativity more effectively. In another international study, Egana-delSol (2023) conducted a quasi-experimental study with 297 high school students in Chile to evaluate the effects of an art-based program on academic performance, creativity, and creative behaviours. The program featured semester-long workshops led by professional artists specializing in disciplines such as painting and music. The findings demonstrated notable improvements: academic grades increased by 0.61 standard deviations (SD) in language, 0.36 SD in math, and 0.33 SD in art. Additionally, students' creativity, assessed using Torrance's Tests, showed significant enhancement, and their cultural behaviours, such as creating handicrafts and watching films, also improved. The program encouraged a greater inclination toward pursuing higher education, underscoring its contribution to both cognitive and socio-emotional development. Besançon et al. (2015) investigated the impact of school environments on creativity, comparing traditional schools with Waldorf schools among 131 French students. In Waldorf schools, practices such as fostering autonomy, encouraging active participation, and nurturing intrinsic motivation were emphasized to enhance creativity. The study found that the type of pedagogical approach did not significantly influence creativity or divergent thinking. However, while intrinsic motivation positively influenced creativity, extrinsic motivation was found to have a strong negative correlation with creativity across both school types. Additionally, the study noted that students identified as more creative reported lower levels of life satisfaction. Similarly, Richardson and Mishra (2015) developed a scale to measure the learning environment's ability to support creativity, focusing on three key components: the physical environment, learning climate, and learning engagement. The physical environment referred to the tangible aspects of the learning setting, while the learning climate encompassed the relationships between teachers and students and the overall atmosphere. Learning engagement was associated with the nature of learning activities. The study highlighted the importance of teachers being open-minded and providing students with diverse spaces to foster creativity. Additionally, it emphasized the need for a friendly school environment with accessible learning resources and adequate support to encourage creative learning. On another note, Yilmaz (2010) examined the impact of principals' ethical leadership on school creativity by studying 527 school teachers in the Konya region of Turkey. The findings revealed a significant relationship

between principals' ethical behaviours and school creativity. Notably, ethical decision-making was strongly associated with enhancing organizational creativity, highlighting the critical role of ethical leadership in fostering a creative school environment. Hong et al. (2009) explored how teachers' beliefs about knowledge, motivation, and goals influence their teaching practices, focusing on 178 school teachers. The study examined how teachers perceived practices that foster student creativity, including problem-solving, knowledge transfer, persistence, creativity, and teamwork. The findings emphasized the importance of a teacher's focus on learning goals, significantly impacting all five approaches to promoting creativity in the classroom. Teachers with strong beliefs about knowledge and high motivation for creative work were more likely to support student creativity through their methods. Interestingly, the study revealed that a teacher's drive to tackle difficult tasks or general views on learning did not consistently predict most creative teaching practices.

Another study by Aljughaiman (2005) investigated school teachers' perceptions and classroom practices regarding creativity. The study revealed that many teachers held misconceptions about the true meaning of creativity. This gap led to inconsistencies between their stated support for creativity and their actual classroom practices with creative students, highlighting a disconnect between teachers' beliefs and actions in fostering creativity. Similarly, Brandon et al. (2024) conducted a mixed-method study to examine the perspectives of 220 teachers on school-based support for student creativity, employing both qualitative and quantitative measures. The findings revealed that teachers and schools were at least moderately supportive of creativity. Teachers identified time as the most critical support they provided to students, though their focus tended to be more on their own creative practices rather than students' creative outputs. The study recommended granting teachers greater autonomy in school scheduling to foster student creativity and incorporating creative teaching practices into teacher training curricula. Align with the context, Alsahou (2015) conducted a qualitative study to explore science teachers' beliefs and practices in fostering creativity in classrooms, with a focus on sociocultural factors. The study found that teachers could articulate clear definitions of creativity and believed that specific approaches could effectively nurture student creativity and provide favourable sociocultural conditions. Case studies highlighted how these sociocultural contexts influenced teachers' beliefs and practices in promoting creativity within science classrooms. Zhang et al. (2020) conducted a

longitudinal study to examine the development of creativity in 203 students, focusing on differences between boys and girls and the role of support from teachers and classmates. The study found that while fluency in creativity increased steadily, flexibility and novelty showed more complex developmental patterns. Girls initially demonstrated higher levels of flexibility and originality compared to boys. Among the factors influencing creativity, teachers' support emerged as pivotal, significantly enhancing students' fluency early on and shaping the growth of originality over time. In another international study, Tan (2001) examined the perspectives of 95 new and 116 experienced teachers in Singapore on activities that foster creativity. Based on their responses, three distinct groups emerged: the first group rated all activities moderately to highly, the second group preferred student-centred independent and group work, and the third group focused primarily on student-directed learning. The majority of experienced teachers belonged to the first group, whereas nearly half of the new teachers were divided between the second and third groups.

Harris and Bruin (2018) conducted an international study on secondary schools in Australia, Canada, Singapore and the USA to explore how creativity is understood, negotiated, valued, and manifested in these institutions. The research examined teachers' and students' perceptions, actions, benefits, and barriers related to fostering creative and critical thinking. The findings highlighted that interdisciplinary, trans-disciplinary and cross-disciplinary learning is significantly influenced by teacher collaboration, dialogue, and classroom organization, which collectively support the development of critical and creative thinking skills. In another study, Page and Thorsteinsson's (2017) study examined the impact of conventional school education on students' creativity, highlighting the concern raised by many academics that individuals tend to grow out of creativity rather than develop it further. The study also addressed challenges faced by Design and Technology (D&T) in contemporary curricula, attributing these difficulties to factors such as financial constraints, governmental policies, university priorities, and traditional practices.

Another study conducted by Pany (2014) on tribal and non-tribal secondary school students in Himachal Pradesh found significant differences in the creative environment of tribal and non-tribal secondary school students. Aligning with the study, Vejian et al.'s (2016) conceptual study explored the concepts of school climate and school creative climate, emphasizing their impact on teachers' motivation, attitudes,

behaviours, and beliefs in their daily work routines. The discussion also incorporated organizational climate theory as it pertains to fostering creativity, providing a theoretical framework to understand how the school environment influences creative practices and teacher engagement. In another international study, Camilleri et al. (2024) emphasized the role of classroom interactions in influencing and encouraging students' creativity. They utilized the "Five A's" framework to analyze student interactions, which comprises five entities: actors, actions, cultural affairs, sociocultural affairs, and artefacts. Classroom interaction processes were assessed differently; some were supported and valued, while others were discouraged or devalued. The study found that when students' interactions were supported and encouraged, it fostered creativity. To nurture creativity, teachers should provide guidance during formative years, offer individualized support, and create a meaningful environment with a creative outlook. Similarly, Brandon's (2019) mixed-method study found that most teachers focused on their creative teaching practices rather than student-initiated projects, with a variety of major content areas highlighted as points of pride. Teachers with high ICI Index scores often discussed how the entire school community created opportunities for all students to engage in creative activities. In contrast, teachers with low ICI Index scores reported limited support for student creativity, often restricted to specific groups such as gifted students or those involved in the school chorus. Also, Gralewski and Karwowski (2016) investigated how teachers' implicit theories of creativity influence their ability to recognize students' creativity, analyzing data from 131 teachers and 508 Polish high school students. They identified four teacher profiles based on implicit theories: two groups aligned with creativity theories and two with misconceptions about creative traits. Teachers who viewed creativity as adaptive were more accurate in assessing girls' creativity, while those perceiving it as innovative were better at recognizing boys' creativity. The study highlighted significant gender biases and suggested that teachers' understanding of creativity shapes their recognition accuracy, emphasizing the need for targeted professional development.

### **2.4.3. Studies on Family Support**

The relationship between parenting styles and creative thinking in students has been studied extensively. Zhao and Yang (2021) conducted a study on 2,143 students from a high school in northern China to examine the relationship between parenting styles and creative thinking. They found that parenting styles play a greater role in the creative

thinking of girls, lower-grade students, and those with disadvantaged family backgrounds. Interventions targeting creative thinking among underprivileged students will yield higher returns. The results also showed parental emotional warmth positively influences creative thinking, while rejection and overprotection negatively affect it. Fathers' emotional warmth had a larger positive effect than mothers, while maternal rejection and over-protection had a greater negative effect. In another study, Jankowska and Gralewski (2022) conducted a study on 313 parents in Poland to investigate the impact of constructive parenting styles on fostering creativity in parent-child relationships. They found that parental acceptance and autonomy granting were positively associated with encouragement to experience novelty, support for perseverance in creative efforts, and encouragement to fantasize. The study highlighted gender differences, showing that fathers' autonomy granting significantly influenced creative climates, whereas mothers' acceptance played a more pivotal role. These findings underscore the importance of tailored parenting behaviours in cultivating children's creativity. Similarly, Mehrinejad et al. (2015) conducted a study on 400 students to investigate the relationship between creativity and parenting styles. They found a significant positive relationship between authoritative parenting style and creativity. In contrast, Chen (2021) conducted a longitudinal study with 258 Chinese adolescents to examine the relationship between parenting behaviours and adolescents' creativity. The study found a negative relationship between authoritarian parenting style and creativity, suggesting that strict and controlling parenting may hinder the development of creative thinking in adolescents. In parallel, Ramezani et al. (2017) conducted a study on 100 school students from Estahban to investigate the relationship between parenting styles and children's creativity. Results revealed a significant positive relationship between dimensions of creativity (fluency, flexibility, originality, and elaboration with details) and parenting style. These studies highlight the importance of understanding the mechanisms of developing this relationship and the potential benefits of targeted interventions for underprivileged students.

Lew (2015) surveyed 510 middle and high school students to investigate the relationship between home environment and creativity. The study revealed a significant link between adolescents' creativity and their home environment, with students from more supportive family environments demonstrating higher creative abilities. In a similar context, Kumar and Singh (2018) conducted a study on 250 senior secondary

male students in Haryana, India, to explore the relationship between perceived family environment and creativity. Using the Torrance Tests of Creative Thinking and the Family Environment Scale, they found that positive family attributes, such as expressiveness, independence, and achievement orientation, were strongly correlated with creativity dimensions like fluency, flexibility, originality, and elaboration. In contrast, family environments characterized by conflict and control negatively affected creativity. The study highlighted the importance of supportive and achievement-oriented family settings in nurturing creative thinking. In another study, Jankowska and Karwowski (2019) investigated the role of family socioeconomic status (SES) and parental involvement in the development of children's creative thinking. The study found a linear increase in children's figural creative thinking, though with variations across participants. While family SES was linked to the initial level of creative thinking, it did not affect its growth. Parental involvement focused on performance negatively impacted creative thinking, while an intrinsic mastery orientation was found to be unrelated to observed changes in creativity. Similarly, Sinha (2021) conducted a study with 300 high school students from Gaya to explore how environmental factors influence children's creative behaviour. The study found that students from high socioeconomic status (SES) backgrounds demonstrated better verbal and non-verbal creative potential compared to those from low SES groups. Additionally, students from conservative and liberal backgrounds showed significant differences in their verbal creative potential. Aligning with the concept, Liang et al. (2021) investigated the development of creativity in Chinese children and young adolescents (ages 9-14), hypothesizing that family socioeconomic status (SES), perceived parenting, and after-school activities contribute to creativity development. The study found that self-rated creativity was positively associated with children's perceived parenting and SES, while expert- and teacher-rated creativity was positively linked to academic achievement. The study also found that perceived parenting and family SES were the most significant contributors to creativity, followed by age. Participation in after-school activities also played a critical role in fostering creativity. The findings emphasize the importance of nurturing family environments and balanced after-school engagements in supporting creativity development. Sen and Sharma (2013) conducted a study using qualitative semi-structured interviews and naturalistic observations to explore family dynamic relationships that foster a child's creativity and subsequent nurturance. The case profiles revealed common patterns in the nurturing process, such as cohesive families

with shared goals and parents actively supporting their children's creativity. This support included allocating resources, introducing children to relevant domains, being closely involved in learning and expressing praise. The key factor in successful nurturance was the alignment of purpose, characterized by strong parental motivation to nurture their child's creativity and the child's internal motivation to persist in creative endeavours. Similarly, Pugsley and Acar (2020) conducted a study with 1,324 parents, primarily mothers, to examine how parents' attitudes and values toward creativity, the creative home environment, and mindful parenting style are related to their perceptions of creative versus socially acceptable characteristics. The results indicated that parents who value creativity and foster a creative environment are more likely to support their children's creativity. Additionally, a mind-full parenting style indirectly supports creativity, as it is associated with a lower emphasis on socially acceptable characteristics, some of which may conflict with creative behaviours. Meanwhile, Gralewski and Jankowska (2020) conducted a study on 552 high school students to investigate the relationship between perceived parenting dimensions and children's creative abilities, as assessed by the Test for Creative Thinking-Drawing Production (TCT-DP). The results revealed that parental child acceptance and autonomy support were weakly but positively related to children's creative self-efficacy and creative personal identity, suggesting that supportive parenting in these areas can contribute to the development of creative confidence and identity in children. In another international study, Fan et al. (2024) conducted a meta-analysis synthesizing 30 studies on 20,906 participants to examine the relationship between parental involvement and student creativity. The analysis found a small but significant positive correlation ( $r = 0.101$ ), suggesting that autonomy support, behavioural control, and content support positively influenced creativity, while psychological control had a negative impact. The study also revealed that factors such as student grade level, parental gender, and cultural region did not significantly moderate the relationship. These findings underscore the complex role of specific parental behaviours in fostering or hindering students' creative development. Further, Tang et al. (2022) conducted a large-scale survey with over 5,000 Chinese students and their parents to explore how parental support and creative self-efficacy influence students' creativity in general and STEM-specific contexts. The study found that while the direct effects of parental support and creative self-efficacy on students' creative ideation behaviours (CIB) were not significant, indirect effects mediated by students' creative self-efficacy were substantial. Students' creative self-

efficacy emerged as a strong predictor of both general and STEM CIB, emphasizing its critical mediating role. These findings highlight the importance of fostering creative self-efficacy to enhance students' overall creativity. Meanwhile, Zheng et al. (2020) studied the impact of over-parenting, team learning, and coaching by supervisors on employee creativity among Chinese only-child millennials. The study found that parental involvement in schooling positively impacted creativity, while daily life arrangements were inversely related to creativity. Supervisors' coaching behaviours enhanced creativity and partially moderated the relationship between over-parenting and creativity. Additionally, team learning moderated the interrelationships between over-parenting, coaching behaviours, and employee creativity. The study offers recommendations for parenting approaches and recruiting Chinese millennials to foster creativity in the workplace.

Furthermore, Miller and Gerard's (2019) study examined how family background characteristics and parent-child relationships impact children's creativity development. The findings indicated that social class positively influences verbal creativity, while nonverbal assessments showed mixed results. Younger children with less interaction with siblings were generally less creative, though birth order effects were inconsistent. Gender differences in creativity were not observed in very young children but emerged as they grew older. Parents of creative children often exhibited feelings of security and competence, with parent-child relationships characterized by mutual respect, independence, and freedom, fostering an environment conducive to creativity. Aligning with the concept, Qgundipe and Chika's (2022) study on parenting styles in Port Harcourt Metropolis found that parents' creativity significantly contributes to children's creativity. They found that parental styles not only impact children's creativity but also predict it. Authoritative and permissive parenting styles were found to be more impactful on children's creativity development than authoritarian styles. Another study conducted by Fang and Shen (2021) on 239 students investigated the relationship between parents' parenting styles and student creativity. Pearson correlation coefficients were extracted, and regression analysis was performed, revealing that undergraduate students with democratic parents tend to show stronger creative thinking. This study opens the way to further study what parental characteristics may be responsible for students' creativity development. Similarly, Fearon et al. (2013) investigated the relationship between parenting styles and creativity among 54 parents

and 66 Jamaican students. The study found that authoritarian parenting was the most prominent predictor of children's creativity, with a negative relationship. Additionally, parents' creativity levels were higher than those of their children and served as a significant predictor of the children's creativity. These findings underscore the influence of parenting style and parental creativity on fostering or hindering creative development in children. The study by Lim and Smith (2008) investigated the relationship between parenting styles, creative personality, and loneliness among South Korean sixth graders. The findings revealed that leniency-based parenting was associated with higher levels of loneliness but showed no connection to children's creative personalities. Conversely, acceptance-based parenting was linked to higher creativity, although it did not directly influence loneliness. Notably, creativity mediated the relationship between acceptance-based parenting and loneliness. This study underscores the significance of parenting styles in nurturing children's creativity while balancing their emotional well-being. Another correlational study was conducted by Al-Tamimi and Qudah (2019) on 677 public school students in the Wadi Sir District to investigate the relationship between parenting styles and creativity among students. The findings revealed that the students' creativity levels were moderate, and the predominant parenting styles among their parents were democratic and overprotective. This study highlights the potential influence of these parenting approaches on fostering creativity in students. Another correlation study was conducted by Nosrati et al. (2014) on 200 female high school students to examine the relationship between mothers' parenting attitudes and students' creativity and curiosity. The results, analyzed using the Pearson correlation coefficient, revealed a significant positive correlation between democratic parenting and students' creativity, as well as between acceptance and students' curiosity. These findings emphasize the role of supportive and democratic parenting in fostering creativity and curiosity in adolescents. Similarly, Miller et al. (2012) surveyed 323 students to investigate the relationships among perceived parenting style, perfectionism, and creativity. The findings revealed a positive relationship between permissive parenting and creativity, while authoritarian parenting was positively associated with socially prescribed perfectionism but negatively related to creativity. This study highlights the complex interplay between parenting styles, perfectionism, and creative outcomes in high-achieving populations. Zhang et al. (2024) conducted a cross-sectional study with a randomly selected sample of 3,647 younger and 3,621 older school students in Suzhou, China, to assess the effects of out-

of-school activities on creativity and curiosity development. The study revealed that participation in arts and sports significantly enhanced students' self-reported creativity and curiosity, whereas engagement in Internet-based activities negatively impacted these traits. Younger students exhibited higher levels of creativity and curiosity compared to older students, indicating a decline during adolescence. The findings underscore the positive influence of indoor and outdoor activities on fostering creativity and curiosity while cautioning against excessive reliance on online activities due to their detrimental effects.

#### **2.4.4. Studies on Creativity with Relations School and Family Supports**

Fitriana and Purwastuti (2020) conducted a study on 100 children, their parents, and 18 teachers from 9 schools in Jambi City. The study results showed that parents with an authoritarian parenting style, particularly those with a high school education background, negatively influenced the development of creativity in early childhood. This finding suggests that more controlling and less supportive parenting approaches may hinder children's creative growth during their formative years. Align with the context; Abdulla Alabbasi et al. (2024) conducted a study to explore the relationship between creativity expressed at home and in school among gifted and non-gifted students in the United States. The findings revealed that creativity demonstrated in home environments strongly predicted school-based creative behaviours, particularly among gifted students. In contrast, non-gifted students exhibited weaker correlations, suggesting that external support systems might be more influential for this group. The study underscores the significance of nurturing creativity in both home and school settings to bridge creativity gaps and fully develop students' creative potential across diverse contexts.

#### **2.5.0. Research Trends**

In the literature review, after a comprehensive examination and analysis of the available studies, 92 studies were identified as primarily relevant to the broader scope of the present research. These studies were categorized into four distinct domains: creativity, creativity and school support, creativity and family support, and creativity with combined family and school support. The analysis revealed that the number of studies focused on creativity, creativity and school support, and creativity and family support

were 44 (48%), 22 (24%), and 24 (26%), respectively. In contrast, the studies addressing the combined domain of creativity with family and school support were only 2 (2%). The domain-wise distribution of the reviewed literature is visually depicted in Figure 2.2. highlighting the varying research emphasis across these areas.

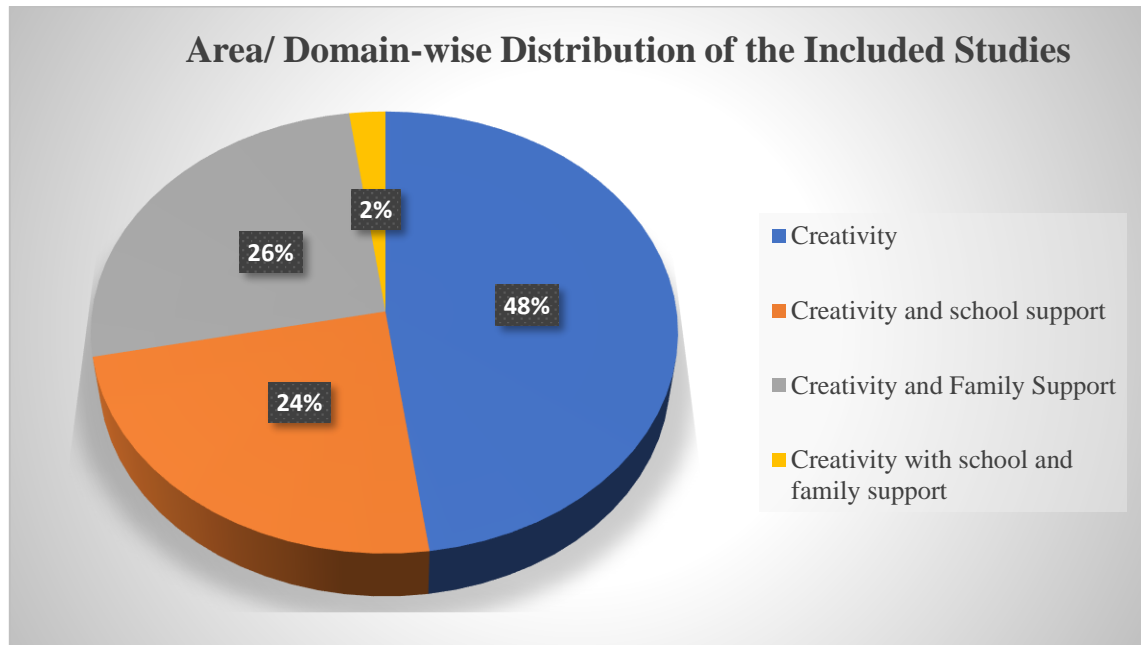


Fig. 2.2. Area/ Domain-wise Distribution of the included studies

An analysis (Fig. 2.3.) of the selected literature in this study highlighted various significant methodological approaches utilized in the research. The methodologies included surveys Studies (Cross-sectional survey, Descriptive survey, longitudinal survey, analytical survey etc.) 71 (77%), Review Research 8 (9%), Experimental Studies 6 (7%), Co-relational Studies 3 (3%), Mixed Methods 2 (2%) and Action Research 2 (2%). The findings reveal that surveys were the most frequently adopted research method, emphasizing their suitability and relevance for further investigations in this field.

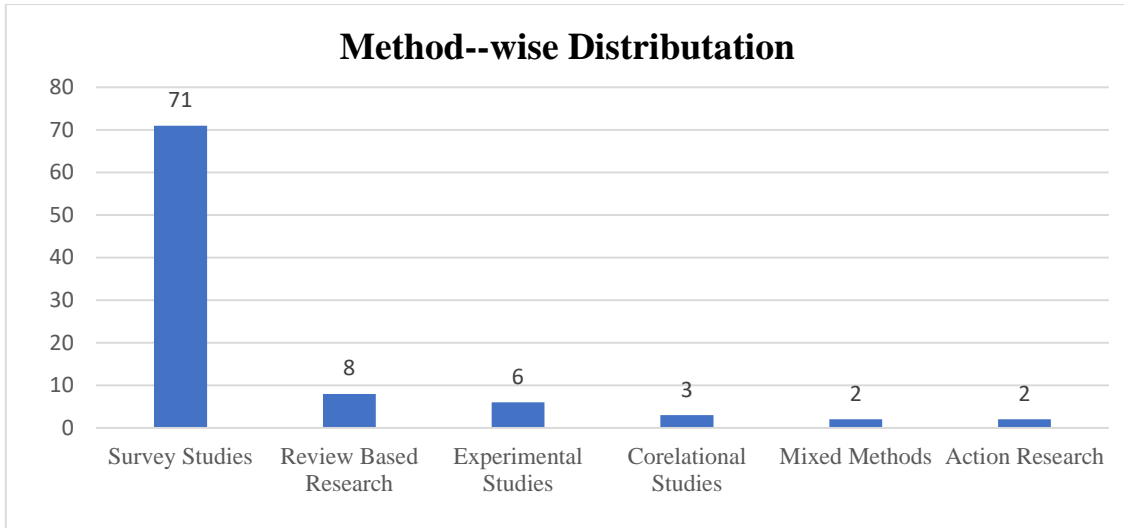


Fig. 2.3. Method-wise Distribution of the included studies

Additionally, the pie chart (Fig. 2.4.) presents the location-wise distribution of the reviewed literature. The analysis reveals that 79 out of 92 studies (86%) were conducted abroad, while only 13 studies (14%) originated in India. This disparity underscores the need for increased research focus within the Indian context.

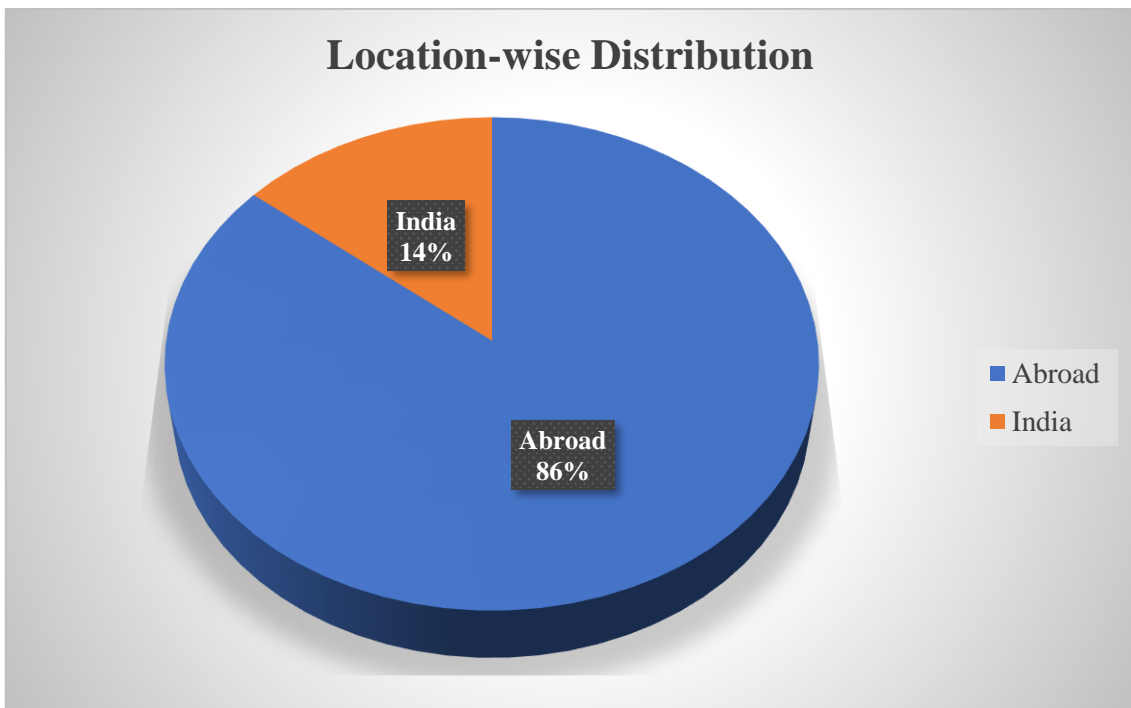


Fig. 2.4. Location-wise Distribution of the included studies

An analysis of the publication years of the 92 studies, as depicted in (Figure 2.5.) reveals notable trends. The distribution of relevant studies across different time periods

shows that five studies (5%) were published between 1999–2004, 7 studies (8%) between 2005–2009, 17 studies (18%) between 2010–2014, 21 studies (23%) between 2015–2019, and 42 studies (46%) between 2020–2024. This progression highlights a significant increase in the number of relevant studies in recent years, underscoring growing scholarly interest in the field.

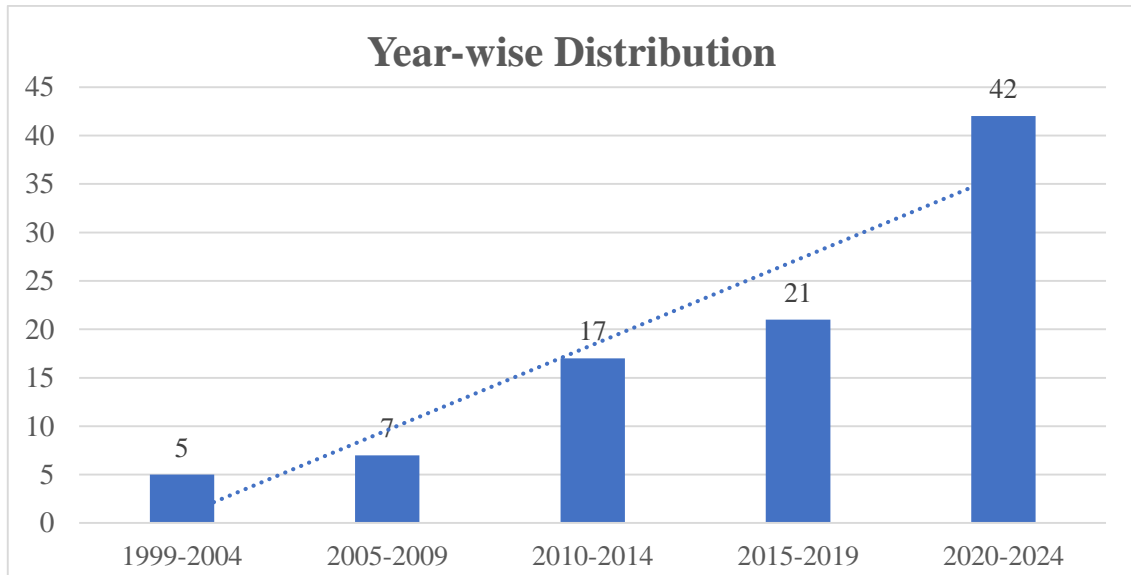


Fig. 2.5. Year-wise Distribution of the included studies

This trend indicates a rising popularity of the field, drawing increased attention from researchers over time. The growing volume of studies underscores this research area's significant importance and potential, establishing it as one of the most promising domains for exploration in the present day.

### 2.6.0. Summary of the Trend Analysis

The trend analysis of the included ninety-two studies conducted between 1999 and 2024 revealed that thematically the highest number of studies was conducted between the years 2020-2024. Year-wise distribution of the studies on other themes showed unequal distribution. Location-wise analysis showed that most of the studies were conducted abroad, and only a few were conducted in Indian contexts. While research method/design was the concern, the analysis showed that a survey study is the best suited for studying creativity, school environment and family environment.

**CHAPTER-III**  
**PROBLEM STATEMENT**

# **CHAPTER-III**

## **PROBLEM STATEMENT**

### **3.0. Introduction**

The 'Problem Statement' chapter serves as the keystone for the research by laying out the preliminary work for the study. The main purpose of this chapter is to describe the research problem and the procedure followed to identify it. This chapter focuses on the investigator's assumptions, background, and positionality, establishing the rationale behind the study, research questions, statement of the problem, operational definition, clarification of objectives, formulation of hypotheses, and delineation of the study's delimitations.

### **3.1. Assumptions, Background, and Positionality of the Researcher in the Study**

The researcher feels that his family and school played an important role in his academic achievements, creative work, participation in co-curricular activities, independent expression of opinions, and solving various problems while he was a school student. The researcher's interest area is creativity. Accordingly, he researched creativity as the topic of his M.Phil. dissertation. The researcher has been teaching in school and college for the past eight years, and he is currently employed with Belda College as an Assistant Professor in West Bengal. While working as a School Teacher, he conducted various co-curricular activities with students, such as handicrafts, drama, culture programs, sports, Writing poetry, Painting etc. He feels that with the support of the school environment and teachers, students are happily participating in all these co-curricular activities and are able to show their skills. The researcher also noticed that when her daughter is allowed to do a task independently, she does it with joy and demonstrates her own skills. Lower secondary class is an important developmental stage in a student's life. At these stages, students love to experiment with various topics, want to express their opinions freely, and want to express their originality in any task. The researcher feels that if a student is given a better school and family environment, his or her creativity can be enhanced. Therefore, after considering all aspects, the researcher selects this area as the topic of his present research.

### **3.2. Rationale of the Study**

In the 21st century, creativity is a valuable asset that fosters wisdom beyond the capabilities of machines. It opens doors to alternative possibilities and innovative problem-solving approaches (Piirto, 2011; Oke et al., 2022). Creativity is one of the most popular research areas among psychologists and educationists (Sawyer & Henriksen, 2024). We all human beings possess more or less creative abilities. The enfoldment of this creative ability requires proper nourishment. Christie and Johnsen (1983) reported that creativity was commonly defined as ideational fluency, flexibility, and originality (Wallach & Kogan, 1965). Many authors have also discussed the enormous waste of creative talent due to the lack of opportunities for developing and expressing this creative potential (Alencar, 1995, 1996; Alencar, Fleith & Virgolim, 1995; Montoury & Purser, 1995). Creativity is not a single characteristic but rather the result of the interplay of multifaceted intellectual abilities influenced by various factors (Guilford, 1965). Osborn (1957), Parnes and Meadow (1959, Lee (2004), 1969), Tripathy and Shukla (1990), Sullivan and Tylor (1967) et al. (1958, 60) etc. have clearly stated that creativity can be enhanced through training, stimulation and intervention.

The development of creative abilities is very important for all of us. Many research results found that different factors influence students' creativity (Le et al., 2022). Malhotra (1990) suggested that the synectic teaching method affected the students' improvement on all four factors, viz., fluency, flexibility, originality and elaboration. A supportive environment is critical for children's creativity development (Amabile, 1996; Niu, 2007). Torrance (1970) and Guilford (1965) emphasized that personalized teaching approaches in classroom settings allow students to express and develop creativity. Teaching methodologies also significantly affect creativity (Melka, 2024; Raeisoon et al., 2024). Melka (2024) highlighted the importance of integrating teaching approaches such as project-based, inquiry-based, brainstorming, and problem-based learning into traditional classrooms to cultivate creativity. Problem-solving activities, in particular, significantly enhance creativity, improving traits such as fluency, flexibility, originality, elaboration, adventurousness, curiosity, and the ability to embrace challenges (Arabacı & Baki, 2023; Komalasari et al., 2024; Lou et al., 2017). Furthermore, Niu and Sternberg (2003) observed that creativity progresses significantly when students receive explicit instructions from teachers on creativity. Recent advancements propose innovative educational models to foster creativity. Zana-Sternfeld et al. (2024) introduced the Empowering Creative Education Model, which integrates creativity into academic

settings to develop self-awareness, academic success, and emotional well-being. Positive peer relationships and emotional and environmental connections to the classroom create a safe and open learning environment that enhances students' creative potential (Zhang et al., 2023; Dung My Le et al., 2022). Teacher support has been identified as a key factor, boosting students' fluency early on and fostering originality over time (Zhang et al., 2020). Teachers who adopt open-minded attitudes, provide ample space for creativity and focus on learning goals while maintaining a strong belief in knowledge and motivation for creative work can significantly influence students' creativity (Richardson & Mishra, 2015; Hong et al., 2009). On a related note, Yilmaz (2010) demonstrated a significant link between school principals' ethical behaviors and the creative outcomes of schools, with ethical decision-making showing strong ties to creativity. However, challenges persist. Many teachers hold misconceptions about creativity and lack clarity on the actions needed to foster it. This is often due to subjective biases, formative assessments, and a focus on their own creative practices rather than students' creative outputs (Aljughaiman, 2005; Brandon et al., 2024; Bolden et al., 2019). Harris and Bruin (2018) suggested that interdisciplinary collaboration, sharing experiences about classroom dialogue, and organizational strategies could help teacher's foster critical and creative thinking among students. In conclusion, school support plays a more crucial role than ever in developing students' creative potential, enabling them to thrive in an increasingly complex world.

School environment is a vital source of social support from both sides, teachers and peers. The empirical study of creativity also shows that school support is an imperative factor influencing students' creativity (Zhang et al., 2020). The secondary stage is a vital stage for the development of creative abilities. Understanding the creativity of higher secondary school students is particularly crucial for several reasons. High school students, typically aged 14 to 16, are in adolescence, a developmental phase often described as a transition from childhood to adulthood (Van der Zanden et al., 2020). Students undergo significant neurodevelopment changes during this period, including progressing from meta-cognitive to analytical and critical thinking (Demir, 2022; Kleibeuker et al., 2017). These evolving cognitive stages present an ideal opportunity to nurture creativity, equipping students to address real-life challenges in the future (Rothenberg, 1990; Huang & Wang, 2019). Research indicates that creativity among high school students generally exists at a moderate level. However, innovative and targeted strategies and tools can effectively enhance their creative potential (Ayishajuhi &

Sreeletha, 2019; Rababah et al., 2013). Creativity significantly influences academic performance, with private school students who experience greater creative exposure often outperforming their counterparts in government schools (Biswal et al., 2024; Gralewski & Karwowski, 2012). Although creativity shows no notable direct relationship with achievement motivation, it positively impacts educational motivation, intrinsic motivation, and students' focus on innovative adaptation styles (Wang et al., 2021; Mostafavi et al., 2020; Jha, 2012; Dung My Le et al., 2022). Moreover, creativity offers original and practical ways to resolve conflicts, promoting self-efficacy and boosting student self-esteem (González Moreno & Molero Jurado, 2023; Van der Zanden et al., 2020). Additionally, it enhances positive moods, improves well-being, increases life satisfaction, and supports self-actualization in creative individuals (Acar et al., 2020; Li & Wu, 2024; Tan et al., 2008). Interestingly, introverted students often possess greater creative potential, exhibiting higher levels of flexibility and originality (Parveen & Ramzan, 2013; Arabacı & Baki, 2023). However, students with moderate creativity levels may face challenges, particularly in fluency and flexibility, while still demonstrating high originality (Rabahah et al., 2013). While school GPA and creativity show no consistent relationship, creativity uniquely predicts academic success (Mourgues et al., 2016; Gralewski & Karwowski, 2012; Freund & Holling, 2008). Further research on the creativity of high school students reveals that various demographic factors significantly influence it, both positively and negatively. Factors such as gender, socio-economic status, locality, and the class of study often positively shape creativity (He et al., 2015; Chinwe & Ugwuegbulam, 2014; Madireddy & Paripally, 2022). For example, Sindhuja and Punitha (2018) found that girls exhibited higher levels of creativity than boys, and English-medium students surpassed Tamil-medium students in creative outputs. However, Rao (2022) reported no significant differences in creativity between rural and urban students or between government and private school students.

The family environment is the closest and most influential social condition for child development, including creative growth (Sudrajat, 2019). Creative development is strongly associated with parental involvement, a healthy family environment, and positive family attributes such as expressiveness, independence, and achievement orientation (Kumar & Singh, 2018; Lew, 2015; Van der Zanden et al., 2020). Additionally, parental education and autonomy-supportive parenting play vital roles in fostering creativity (Niu, 2007). Fan et al. (2024) demonstrated that autonomy support, behavioral control, and content support positively influence creativity, while

psychological control has a negative impact. Similarly, Zheng et al. (2020) found that parental involvement in schooling enhances creativity, with supervisors' coaching behaviors moderating the adverse effects of over-parenting. Specific parental actions, such as engaging in their child's learning, introducing new domains of education, offering praise, and providing motivation, are key drivers of creative pursuits (Sen & Sharma, 2013). Moreover, parents' creativity significantly impacts their children's creativity, sometimes to a greater extent than their efforts (Qgundipe & Chika, 2022; Fearon et al., 2013). The relationship between parenting styles and students' creative thinking has been extensively studied. Many studies report a positive and significant association between creativity and certain parenting styles (Mehrinejad et al., 2015; Ramezani et al., 2017; Pugsley & Acar, 2018; Queen & Chika, 2022). However, authoritarian parenting consistently shows a negative relationship with creativity, making it the most detrimental style for fostering creative thinking (Fearon et al., 2013; Chen, 2021; Miller et al., 2012). Similarly, democratic and overprotective parenting styles, though prevalent, are negatively correlated with creativity (Tamimi & Qudah, 2019). On the other hand, mindful parenting indirectly supports creativity by encouraging traits that deviate from strict adherence to social norms, some of which align with creative behavior (Pugsley & Acar, 2018). Miller et al. (2012) highlighted a positive correlation between permissive parenting and creativity. Lim and Smith (2008) noted that leniency-based parenting often results in higher loneliness and weaker relationships with children's creative personalities. Few studies have explored the influence of various demographic factors on family support and its impact on creativity. Research suggests that perceived parental support is positively related to creativity and socio-economic status (Liang et al., 2021). For instance, disadvantaged family backgrounds appear to have a greater influence on creative thinking among girls (Zhao & Yang, 2021), while fathers' autonomy significantly impacts creativity (Jankowska & Gralewski, 2022). Family economic status is also linked to initial creativity, though its impact on creative growth remains negligible. However, high socio-economic status correlates positively with both verbal and non-verbal creative potential (Jankowska & Karwowski, 2019; Sinha, 2021). Among these, school and family play a vital role in fostering students' creativity by providing supportive environments (Albari et al., 2013).

Based on the literature review and emerging research trends, there is a growing interest in studying family and school environment for creativity among school students. Despite significant research in these areas, gaps remain that warrant further exploration. The

reviewed studies indicate that creativity is vital for helping students confront future challenges with unique perspectives, and school and family environment play critical roles in shaping creativity. School students' creativity is significantly influenced by demographic variables such as gender, socio-economic status, and locality.

However, limited research has examined the influence of family type and parental education on creativity. Similarly, while school and family environment have been studied separately, there is a noticeable lack of research examining these variables collectively with creativity. However, few have measured the combined effects of demographic factors on social and family support as they relate to creativity. Notably, no comprehensive study has explored the interrelationships among creativity, school environment, and family environment while considering demographic variables as background factors. While numerous studies have addressed these aspects separately, holistic investigation of their combined influence is still absent. Furthermore, although research on these topics has been conducted both in India and internationally, but the number of studies in India remains limited. Notably, no studies have been identified in the context of West Bengal, highlighting a significant research gap in this region.

To address these gaps, the researcher aims to conduct a comprehensive study that examines creativity, school environment, and family environment concerning various demographic variables among secondary school students. In light of these research trends and knowledge gaps, the following research questions have been identified for investigation:

1. What are the prevalence rates of Creativity, School Environment (SE) and Family Environment (FE) among secondary school students?
2. How do demographic factors influence Creativity, SE and FE among secondary school students?
3. How are Creativity, SE and FE interconnected, and how do they independently and collectively affect and predict each other among secondary school students?

Therefore, a comprehensive investigation is essential to examine the influence of school and family Environment on the creativity of secondary school students in West Bengal. This study should also account for various demographic factors to address concerns and bridge the information gaps identified in prior research.

### **3.3. Statement of the Problem**

In light of the rationale, the identified research gaps, and the raised questions, the problem for the present study was stated as “**Creativity among Secondary School Students: The Role of School and Family Support**”.

### **3.4. Operational Definition of the Major Terms Used**

**Creativity:** In the present study, creativity refers to the creative thinking, work, and ideas obtained by secondary school students. It includes a person’s behavioural characteristics like fluency, flexibility, and originality.

**Fluency:** Fluency is an individual's ability to produce many ideas in a given task within a specific time. When the responses are in words, it is called verbal fluency; when they are in figural form, it is called nonverbal fluency.

**Flexibility:** Flexibility is an individual's ability to produce various ideas in a given task within a specific time. In the case of word responses, it is called verbal flexibility; in the case of figural form, it is called non-verbal flexibility.

**Originality:** Originality is the ability of an individual to produce unusual ideas or rarer responses in a given task within a specific time. When the responses are in words, it is called verbal originality; when the responses are in figural form, it is called non-verbal originality.

**School Support:** School Support is defined as the atmosphere prevailed in the school, which affects all the aspects of a student's life and influences his/her overall creativity. In the present study, teachers provide conditions and opportunities like new ideas, learning materials, independent study, encouraging Independent Writing of Answers, etc. to stimulate creative thinking in secondary school children.

**Family Support:** In general, Family Support refers to parental efforts aimed at assisting their child's development. In the present study, Family support refers to a combination of parental involvement (PI) and parental supervision (PSu) among secondary school students. Parents use many aspects of child-rearing, such as discipline, communication, emotional support, etc.

**Parental Involvement:** Parental involvement is defined as a positive interaction between a parent and their child. Parental involvement at home can include parent activities such as discussions about school, helping with homework and enhancing the reading of children.

**Parental Supervision:** Parental supervision refers to a method of child-rearing behavior in which parents are continually informed about their children's activities.

**Parenting Style:** Parenting style is defined as parental efforts aimed at assisting their child in bringing out. In the present study, parenting style is the strategy or method used to raise and nurture their children.

**Secondary School Students:** In India, the secondary school level refers to Class-IX to Class-XII, which covers the fourteen-to eighteen-year-old age group. Lower and higher secondary level consider as class-IX to X and XI to XII. In the present study, secondary school children refer to the students studying in Class IX to Class X in different schools in India.

### **3.5. Objectives of the Study**

The present study was undertaken to meet the following objectives:

1.1. To determine the level of SS among secondary school students in West Bengal (WB).

1.2. To assess the variations in SS among the secondary school students in WB concerning the demographics (School type, class, gender, family type, number of siblings, parental educational qualification and family monthly income).

2.1. To determine the level of FS [in terms of Parental Involvement (PI) and Parental Supervision (PSu)] among the secondary school students in WB.

2.2. To assess the variations in FS (in terms of PI and PSu) among the secondary school students in WB concerning the demographics.

2.3. To find out the dominating parenting styles (PSs) among the secondary school students in WB.

2.4. To measure the influence of demographics on PSs among the secondary school students in WB.

3.0. To assess the variations in overall and dimension-wise creativity among the secondary school students in WB concerning the demographics.

3.1.1. To assess the variations in overall creativity among the secondary school students in WB concerning the demographics.

3.1.2. To examine the variations in overall fluency among the secondary school students in WB concerning the demographics.

3.1.3. To assess the variations in overall flexibility among the secondary school students in WB concerning the demographics.

3.1.4. To examine the variations in overall originality among the secondary school students in WB concerning the demographics.

3.2.1. To examine the variations in verbal creativity among the secondary school students in WB concerning the demographics.

3.2.2. To examine the variations in verbal fluency among the secondary school students in WB concerning the demographics.

3.2.3. To examine the variations in verbal flexibility among secondary school students in WB concerning the demographics.

3.2.4. To assess the variations in verbal originality among the secondary school students in WB concerning the demographics.

3.3.1. To assess the variations in non-verbal creativity among secondary school students in WB concerning the demographics.

3.3.2. To examine the variations in non-verbal fluency among the secondary school students in WB concerning the demographics.

3.3.3. To examine the variations in non-verbal flexibility among secondary school students in WB concerning the demographics.

3.3.4. To assess the variations in non-verbal originality among the secondary school students in WB concerning the demographics.

4.0. To explore the association between SS, FS (PI and PSu) and creativity among secondary school students in WB.

5.0. To determine the effects and predictive potential of SS in explaining the variations in overall and dimensions-wise creativity among secondary school students in WB.

5.1. To determine the effects and predictive potential of SS in explaining the variations in overall creativity among secondary school students in WB.

5.2. To determine the effects and predictive potential of SS in explaining the variations in overall fluency among secondary school students in WB.

5.3. To determine the effects and predictive potential of SS in explaining the variations in overall flexibility among secondary school students in WB.

5.4. To determine the effects and predictive potential of SS in explaining the variations in overall originality among secondary school students in WB.

6.0. To determine the effects and predictive potential of FS (PI and PSu) in explaining the variations in overall and dimensions-wise creativity among secondary school students in WB.

6.1. To determine the effects and predictive potential of FS (PI and PSu) in explaining the variations in overall creativity among secondary school students in WB.

6.2. To determine the effects and predictive potential of FS (PI and PSu) in explaining the variations in overall fluency among secondary school students in WB.

6.3. To determine the effects and predictive potential of FS (PI and PSu) in explaining the variations in overall flexibility among secondary school students in WB.

6.4. To determine the effects and predictive potential of FS (PI and PSu) in explaining the variations in overall originality among secondary school students in WB.

7.0. To determine the combined effects and predictive potential of SS and FS (PI and PSu) in explaining the variations in overall and dimensions-wise creativity among secondary school students in WB.

7.1. To determine the combined effects and predictive potential of SS and FS (PI and PSu) in explaining the variations in overall creativity among secondary school students in WB.

7.2. To determine the combined effects and predictive potential of SS and FS (PI and PSu) in explaining the variations in overall fluency among secondary school students in WB.

7.3. To determine the combined effects and predictive potential of SS and FS (PI and PSu) in explaining the variations in overall flexibility among secondary school students in WB.

7.4. To determine the combined effects and predictive potential of SS and FS (PI and PSu) in explaining the variations in overall originality among the secondary school students in WB.

8.0. To find out the moderating effects of FS (in terms of PSs) in the relationship between SS and creativity among secondary school students in WB.

### **3.6. Hypotheses of the Study**

In keeping with the problem formulated and objectives stated, the following null hypotheses were proposed to be tested:

**H<sub>01</sub>:** There are no significant variations in SS among the secondary school students in WB concerning the demographics (School type, class, gender, family type, number of siblings, parental educational qualification and family monthly income).

**H<sub>02</sub>:** There are no significant variations in FS (in terms of PI and PSu) among the secondary school students in WB concerning the demographics.

**H<sub>03</sub>:** Demographics do not significantly influence the PSs among the secondary school students in WB.

**H<sub>04</sub>:** Overall and dimension-wise creativity (fluency, flexibility and originality) do not vary significantly among the secondary school students in WB concerning the demographics.

**H<sub>05</sub>:** Overall and dimension-wise verbal creativity (fluency, flexibility and originality) does not vary significantly among the secondary school students in WB concerning the demographics.

**H<sub>06</sub>:** Overall and dimension-wise non-verbal (fluency, flexibility and originality) creativity does not vary significantly among the secondary school students in WB concerning the demographics.

**H<sub>07</sub>:** There are no significant associations between SS, FS (PI and PSu) and creativity among secondary school students in WB.

**H<sub>0</sub>8:** There is no significant effect and predictive potential of SS in explaining the variations in overall and dimension-wise creativity (fluency, flexibility and originality) among the secondary school students in WB.

**H<sub>0</sub>9:** There is no significant effect and predictive potential of FS (PI and PSu) in explaining the variations in overall and dimension-wise creativity (fluency, flexibility and originality) among the secondary school students in WB.

**H<sub>0</sub>10:** There is no significant combined effect and predictive potential of SS and FS (PI and PSu) in explaining the variations in overall and dimension-wise creativity (fluency, flexibility and originality) among the secondary school students in WB.

**H<sub>0</sub>11:** FS (in terms of PSs) does not significantly moderate the relationship between SS and creativity among secondary school students in WB.

### **3.7. Delimitations of the Study**

Due to time and other social constraints, the present study was delimited to the following areas:

1. The study is delimited to two sub-divisions (Medinipur Sadar and Kharagpur) of West Medinipur district in WB.
2. This study's sample comprises only students enrolled in ten selected secondary schools in West Medinipur district in WB.
3. The present study included only 544 secondary school students as representatives.
4. The study is delimited to measuring the Secondary school student's FS, SS and creativity.
5. Demographic characteristics (independent variables) considered in the study include school type, class, gender, family type, number of siblings, parental educational qualification and family monthly income.
6. The study is delimited to administering consent letters, demographic profile sheets, and three questionnaires for collecting data.
7. The study is delimited to schools under the West Bengal Board of Secondary Education (W.B.B.S.E).

### 3.8. Conceptual Framework

Based on the theoretical and conceptual perspectives discussed earlier (Chapter I), the researcher designed a conceptual framework that visually illustrates the interaction between Creativity, FS, SS, Creativity and demographic factors among secondary school students. The conceptual framework for the study is presented below:

#### A. Variables:

1. *Independent Variables:* Demographic Factors, FS, SS
2. *Dependent Variables:* Creativity, SS and FS.
3. *Moderating Variable:* FS (PSs)

#### B. Theoretical Links:

- *Torrance's Theory of Creativity* is based on the idea that creativity is the ability to solve problems, generate new ideas, and identify connections between ideas.
- *Rhodes's 4-Ps Theory of Creativity* is a model that describes creativity as having four components: person, Process, Product, and Press (environment).
- *B.K. Passi's theory of creativity* is a multidimensional attribute that includes seeing problems, fluency, flexibility, originality, inquisitiveness, and persistence.
- *Brofenbrenner's Ecological Systems Theory* is a model that explains how a person's development is affected by their environment. The theory is based on the idea that a person's development is shaped by the interactions between the person and the systems that make up their environment.
- *Vygotsky's* social development theory emphasizes social interactions and support provided by teachers and peers.
- *Baumrind's Parenting Styles Framework* categorizes parenting into four distinct styles: authoritative, authoritarian, permissive, and neglectful, offering valuable insights into how various parenting approaches impact children's creative development.
- *Lamborn et al.'s Parenting Theory* builds on Baumrind's framework. This theory highlights the complexity and diversity of parental behaviours, emphasizing their multifaceted implications for children's well-being and growth.

### C. Hypothesized Relationships:

- Demographic Factors → FS, SS, and Creativity: Demographic factors may influence FS, SS, and Creativity.
- SS → Creativity: SS is hypothesised to influence Creativity.
- FS → Creativity: FS is hypothesised to influence Creativity.
- SS → FS → Creativity: FS potentially moderates the relationship between SS influence Creativity.

### D. Visual Representations:

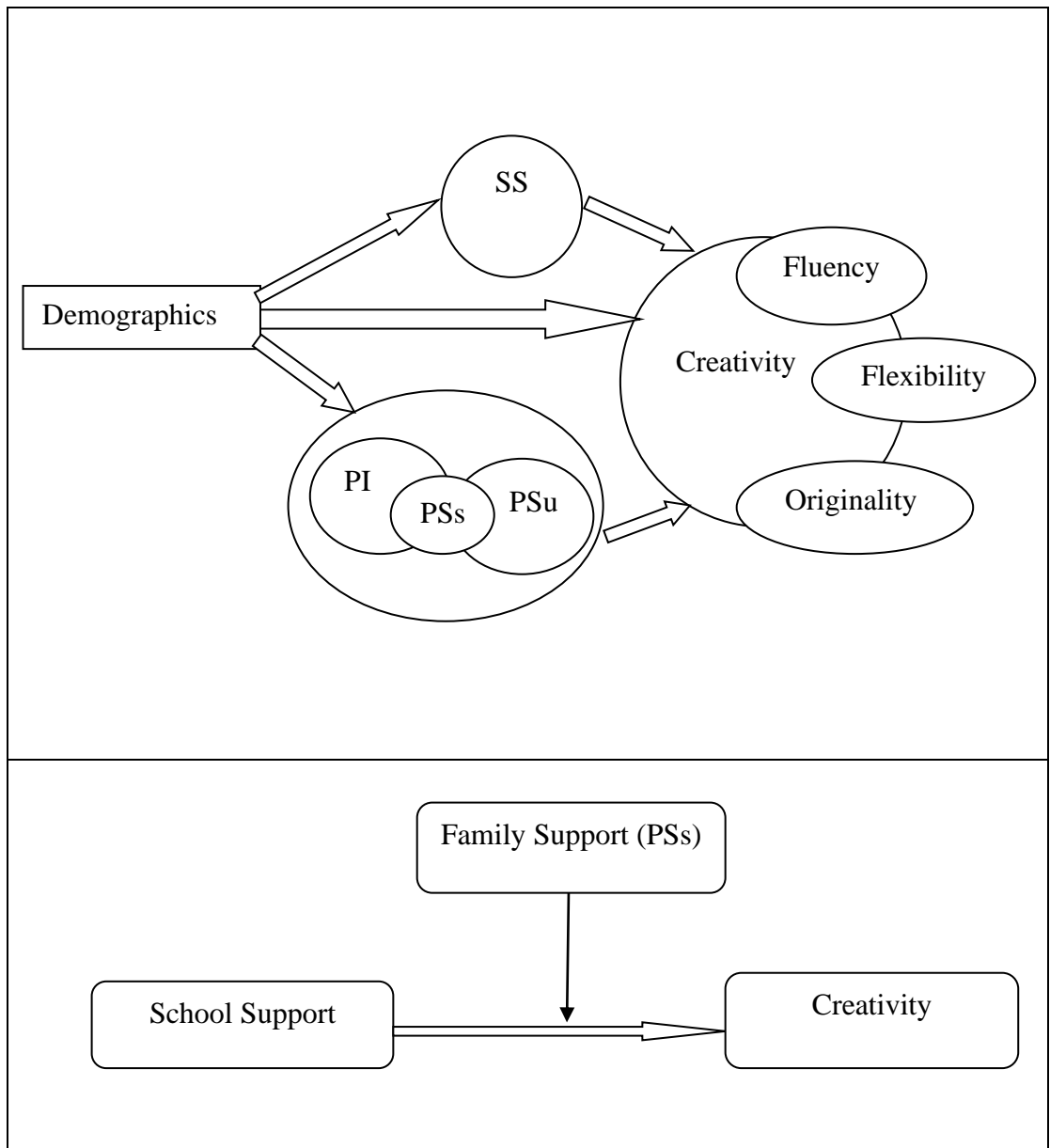


Fig. 3.1. Conceptual Framework

Using this conceptual framework, the researcher systematically explored the study's complex relationships among key variables and theoretical constructs, offering valuable insights into the factors affecting creativity among secondary school students. The framework guided data collection, analysis, and interpretation, enabling a thorough understanding of the research phenomena.

**CHAPTER-IV**  
**METHODOLOGY OF THE STUDY**

# **CHAPTER-IV**

## **METHODOLOGY OF THE STUDY**

### **4.0. Introduction**

This chapter presents the methodology of the study. The study's methodology is essential for the research and follows systematic and scientific procedures. The method and procedure used determine the outcome of any study (Kaur, 2021). It provides solutions to the questions of what and how to do research ((Fatma, 2022). The primary purpose of this chapter is to describe the research design, locale of the study, population, sample, and sampling techniques. It also elaborates on the study's key variables, data collection instruments and procedures, data cleaning and preparation processes, statistical methods for analysis, tools for analysis and reporting, analysis design, and ethical considerations.

### **4.1. Research Design**

This present study follows a quantitative, descriptive research methodology with a cross-sectional design. Quantitative research focuses on testing objective theories by analyzing relationships between variables (Creswell, 2003) and involves “explaining phenomena through the collection and mathematical analysis of numerical data” (Aliaga & Gunderson, 2002). In the present study, the researcher used descriptive research to systematically describe present study without manipulating any variables (Atmowardoyo, 2018). Cross-sectional studies provide a snapshot of data from a wide range of participants, offering insights into the larger population rather than focusing on a specific subset (Zheng, 2015). This approach is also recognized for its efficiency and cost-effectiveness (Wang & Cheng, 2020). The specific research design is provided in Fig. 4.9. presented at the end of this chapter.

### **4.2. Locale of the Study**

The present study was conducted in the West Medinipur District of West Bengal, India. The district derives its name from a local deity, “Medinimata” meaning “mother of the world,” an incarnation of Shakti. West Medinipur (Bengali: Paschim Medinipur, also spelt Midnapore) was established on January 1, 2002, following the division of the erstwhile Midnapore district into two separate districts: Paschim Medinipur and Purba Medinipur. placed in the south-western part of W.B., West Medinipur ranks second

among the state's districts in terms of geographical area, covering 9,295,28 square kilometres. Its administrative headquarters is situated in Midnapore. The district had a total population of 59,13,457 comprising 30,07,885 males and 29,05,572 females (Census, 2011). A significant majority (87.78%) of the population resides in rural areas, with an average literacy rate of 78.00%. The district has three sub-divisions: Medinipur Sadar, Kharagpur, and Ghatal. These sub-divisions encompass 21 community development blocks and seven municipalities (Govt. of West Bengal, 2024). The Kharagpur sub-division includes Kharagpur municipality and ten community development blocks: Dantan–I, Dantan–II, Pingla, Kharagpur–I, Kharagpur–II, Sabang, Mohanpur, Narayangarh, Keshiari, and Debra. The Medinipur Sadar sub-division comprises Midnapore municipality and six community development blocks: Medinipur Sadar, Garhbeta–I, Garhbeta–II, Garhbeta–III, Keshpur, and Shalboni. Together, these two sub-divisions cover an area of 53,54,67 square kilometres and have a combined population of 37,29,230. In the 2024 West Bengal Madhyamik (Class 10) examinations, West Medinipur district achieved a pass percentage of 94.62%, securing the third position among all districts in the state. The top two districts were East Midnapore, 97.83%, and Kalimpong, 94.27%. For this study, the researcher selected secondary-level schools from rural, semi-urban, and urban areas within these two sub-divisions. The specific study locations include Medinipur municipality, Medinipur Sadar, Garhbeta–II, Debra, and Narayangarh. A total of ten secondary-level schools were chosen: five from block areas and five from municipality areas. The study's geographical coverage is depicted in Fig. 4.1.

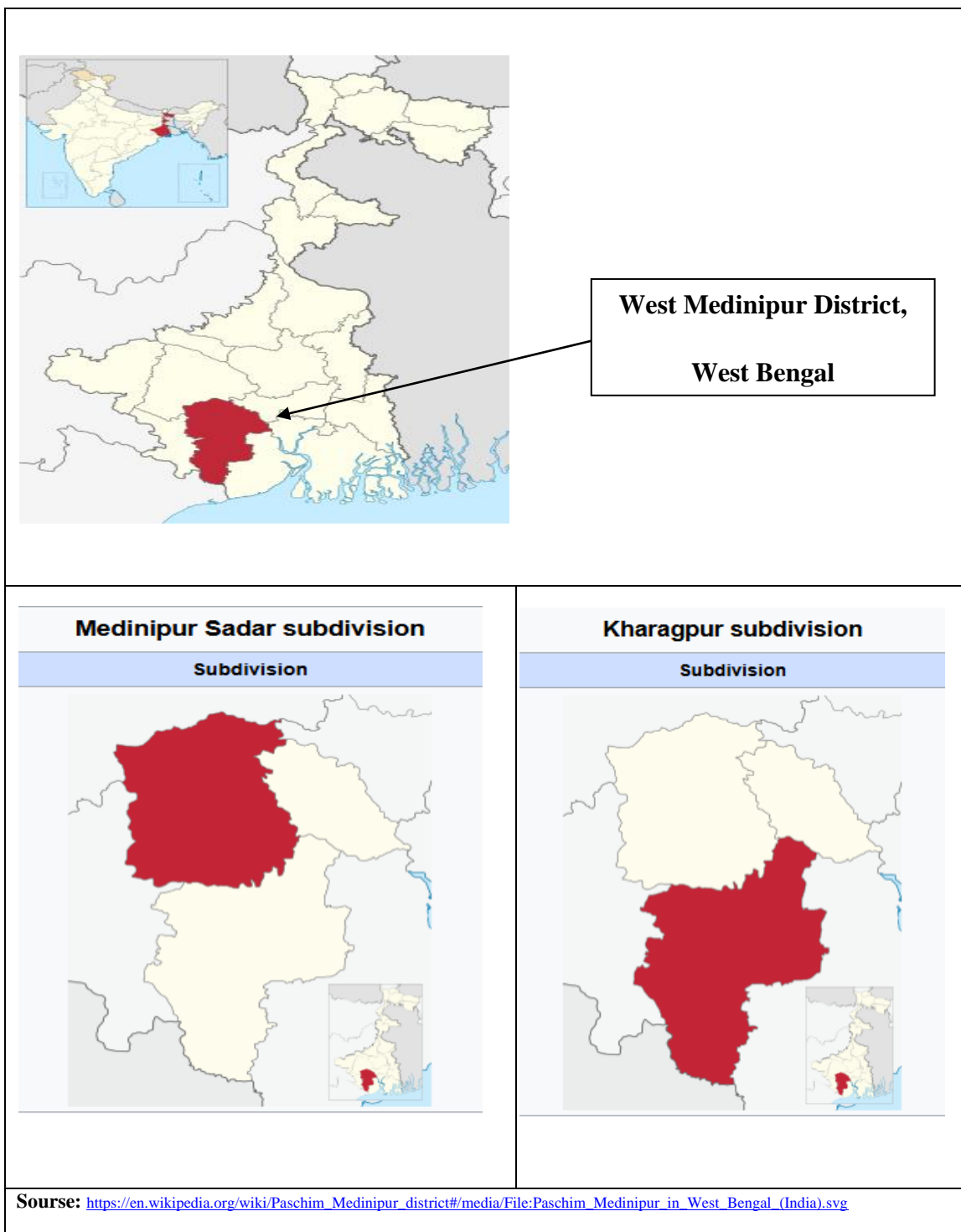


Fig. 4.1. Geographical Location of the Study

### 4.3. Participants of the Study

#### 4.3.1. Population

This study's target population consists of secondary school students of West Bengal, India. According to data from the Banglar Shiksha portal, the total number of secondary school students in the West Medinipur district during the 2023 academic year was approximately 98,720 in Class IX and 81,623 in Class X under W.B.B.S.E., resulting in a combined population of 1,80,343 students.

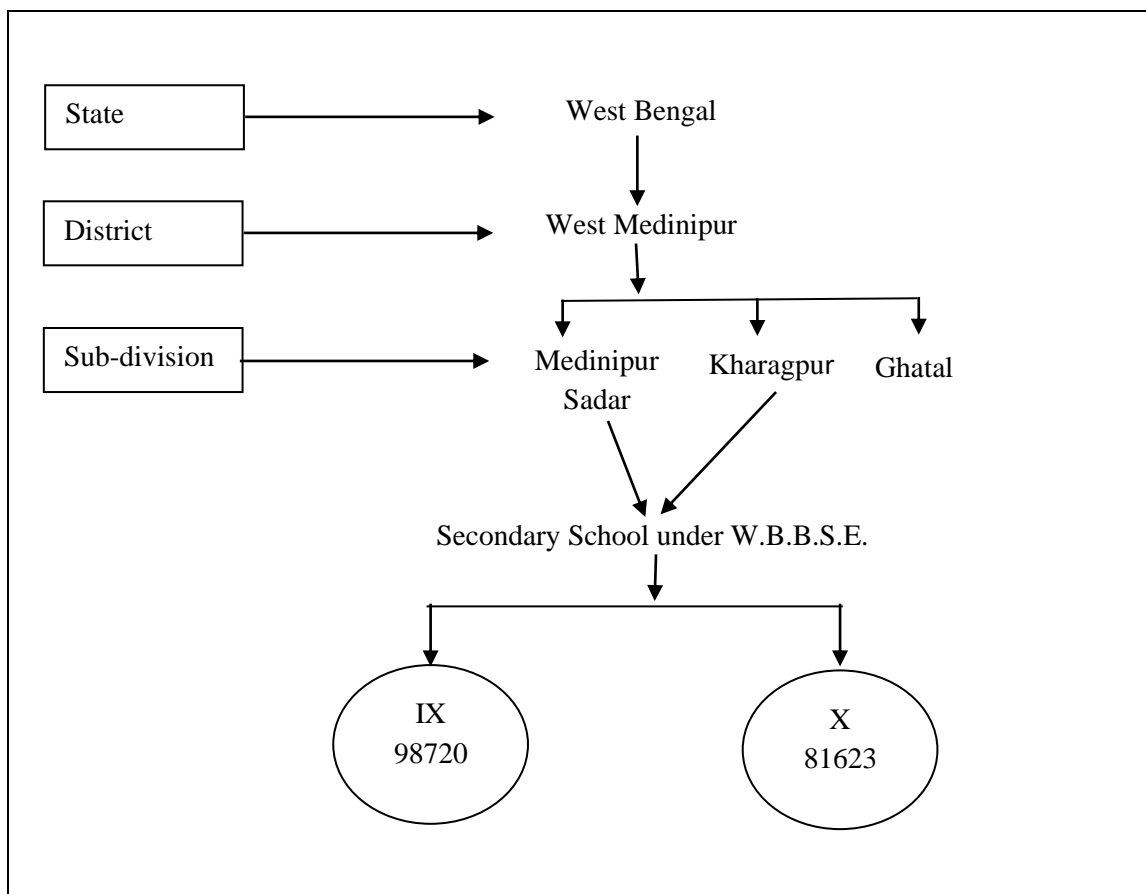


Fig: 4.2. Population Distributions

#### 4.3.2. Determination of Sample Size

Determining a suitable sample size is critical for conducting a reliable and representative sample survey, regardless of whether the population size is known or unknown. The reliability and trustworthiness of survey research heavily depend on carefully selecting a representative sample. The researcher used Krejcie and Morgan's (1970) formula to calculate the required sample size for the present study. This formula ensures that the

selected sample represents the population and is unbiased (Ezugu & Akimbo, 2014). For a finite population of 180,343 individuals, the formula indicated that a minimum of 384 samples would be sufficient. The researcher also used the Raosoft sample size calculator to validate this calculation, providing accurate results based on a user-friendly interface. Using the Raosoft tool with parameters including a 5% margin of error, a 95% confidence interval, and a 50% response rate, the sample size calculation was confirmed for a population of 383. This dual approach ensured accuracy and reliability in determining the required sample size (Aliyu et al., 2019; Ahmat et al., 2018). The formula for sample size determination proposed by Krejcie and Morgan (1970) is provided below.

$$S = \frac{X^2 \cdot N \cdot P \cdot (1-P)}{d^2 \cdot (N-1) + X^2 \cdot P \cdot (1-P)}$$

Where:

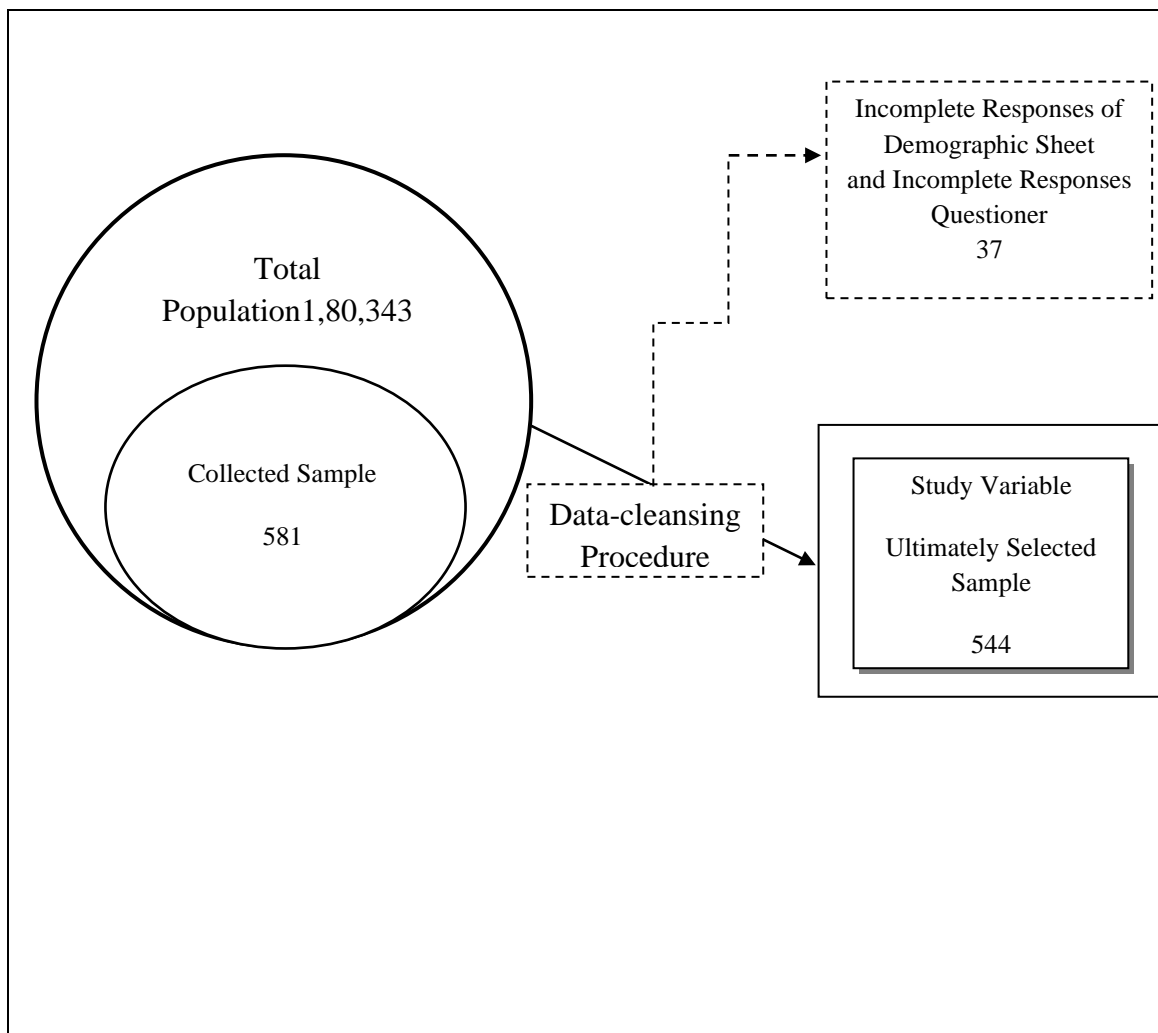
- S = Required sample size
- $X^2$  = The table value of chi-square for 1 degree of freedom at the desired confidence level (usually 3.841 for a 95% confidence level)
- N = The population size
- P = The population proportion (assumed to be 0.5 for maximum sample size)
- d = The degree of accuracy expressed as a proportion (0.05 for a 5% margin of error)

#### 4.3.3. Sampling Procedure and Sample of the Study

The researcher gathered information from 581 students currently enrolled in Secondary level school (IX-X) in the study. The researcher selected these students from 10 schools in the two sub-divisions of West Medinipur district in West Bengal. For the current study, the researcher conveniently selected two sub-divisions, namely, Medinipur Sadar and Kharagpur of West Medinipur, because these sub-divisions were effortlessly reachable to the researcher. Moreover, this technique was cost-effective for the researcher, and the participants were readily available and willing to participate. After that, participants were selected randomly from the Classes. Initially, the researcher acquired 581 data from the 10 secondary schools throughout this round of data gathering. Nevertheless, 37 incomplete data/responses were found and eliminated from the dataset after a comprehensive data cleansing procedure. Consequently, the final sample for this research consists of 544 students from Secondary schools in West Bengal. The following table and figure represent the sampling frame of this study.

**Table No. 4.1. Final Sample of the Study**

Population	Population Size	Sample Size
Secondary School Students	1,80,343	544



**Fig. 4.3. Final Sample Selection Process**

**Table No. 4.2. Municipality, Block and School-Wise Sample Distribution**

<b>SL. No.</b>	<b>School's Name</b>	<b>Municipality Block</b>	<b>No. of Students</b>
1	Nirmal Hriday Ashram Girls' High School	Medinipur	124
2	Midnapore Collegiate School	Medinipur	62
3	Rangamati K. M. High School	Medinipur	39
4	Sarada Vidyamandir	Medinipursadar	37
5	Paharipur Girls' High School	Medinipur	25
6	Keyamacha High School	Garhbeta-II	70
7	Nirmal Hriday Ashram Boys' High School	Medinipur	39
8	The Institute for Academic Excellence School	Narayangarh	64
9	New Integrated Govt. School	Medinipur sadar	51
10	Jotdwaria Vivekananda Vidyabhaban	Debra	70
Total			581

**Table No. 4.3. Demographic Profile of the Participants**

<b>Variables</b>	<b>Labels</b>	<b>N</b>	<b>Percent</b>
School Type	Girls'	147	27.0
	Boys'	98	18.0
	Co-ed	299	55.0
Class	Nine	288	52.9
	Ten	256	47.1
Gender	Male	258	47.4
	Female	286	52.4

Family Type	Joint Family	185	34.0
	Nuclear or Broken Family	359	66.0
Number of Siblings	Single Child	122	22.4
	Having one Sibling	311	57.2
	Having two Siblings	69	12.7
	Having three to six Siblings	42	7.7
Father's Educational Qualifications	Elementary (Up to class VIII)	139	25.6
	Secondary and Higher Secondary (Class-IX to XII)	286	52.6
	Graduation and Above	119	21.9
Mother's Educational Qualifications	Elementary (Up to class VIII)	155	28.5
	Secondary and Higher Secondary (Class-IX to XII)	322	59.2
	Graduation and Above	67	12.3
Family Monthly Income	6,174 - Low	179	32.9
	6,175 – 18,496	180	33.1
	18,497 – 30.830	76	14.0
	30.831 – 46,128	40	7.4
	More than 46,129	69	12.7

#### **4.4. Description of the Variables under Consideration**

A variable is a concept or construct which varies and is assigned values. The numerals or values which are assigned are based on properties of the variable (Swain, 2007). A variable is a condition or characteristic that can take on different values or categories (Johnson & Christensen, 2008). Based on the identified research problem and objectives, three types of variables were considered in this study and categorized into two broad heads: Demographic (Independent variables) and Dependent variables (see table 4.4.).

**Table No. 4.4. Variables under Consideration**

<b>Demographics (Independent Variables)</b>	<b>Measured Variables</b>
1. School Type 2. Class 3. Gender 4. Family Type 5. Number of Siblings 6. Parental Educational Qualifications A) Father’s Educational Qualifications B) Mother’s Educational Qualifications 7. Family Monthly Income	1. Dependent Variable: Creativity  2. Both Dependent and Independent Variables: SS and FS (PI + PSu).  3. Dependent, Independent and Moderating Variables: FS (PSs)

#### **4.4.1. Demographic Variables**

In the present study, these demographic variables are also considered independent variables. Independent variables are the influencing variables that may impact the dependent variables. In the present study, the following independent variables have been considered-

- 1. School Type:** School Type is an independent variable influencing the dependent variables. It is a categorical variable classified into three groups: Girls’, Boys’ and co-ed.
- 2. Class:** In the present study, the researcher included ‘Class’ as an independent variable influencing the dependent variables. This independent variable is divided into two categories: IX and X.
- 3. Gender:** In the present study, the researcher included 'Gender' as an independent variable influencing dependent variables. This variable is divided into two categories: Male and Female.
- 4. Family Type:** Family type is included as an independent variable and classified into two categories: joint and nuclear or broken family.
- 5. Number of Siblings:** In the present study, the participants' number of siblings is an independent variable that influences the dependent variable. This variable is

divided into four categories: Single Child, Having one Sibling, Having two Siblings and having three to six Siblings.

**6. Parental Educational Qualifications:** There are two types of categories in parental educational qualifications, which are:

**A) Father's Educational Qualifications:** The father's educational qualifications is considered an independent variable and classified into three categories: Elementary (Up to class VIII), Secondary and Higher Secondary (Class-IX to XII) and Graduation and Above.

**B) Mother's Educational Qualifications:** The mother's educational qualifications is considered an independent variable and classified into three categories: Elementary (Upto class VIII), Secondary and Higher Secondary (Class-IX to XII) and Graduation and Above.

**7. Family Monthly Income:** The participants' family income means their parents' monthly income is considered an independent variable, categorised into five ranges according to the Kupaswamy Scale (2021) in Indian Rupees: 6,174 – Low, 6,175 – 18,496, 18,497 – 30,830, 30,831 – 46,128 and more than 46,129.

#### **4.4.2. Measured Variables**

Measured variables refer to the characteristics of a object that can be quantified using standardized measures, either readily available or developed for specific research purposes. In some cases, these measured variables are also referred to as dependent variables, depending on their role in the study. In this research, Creativity and its dimensions, SS and FS were considered measured variables. Detailed descriptions of these dependent variables and their respective dimensions are provided below.

**Creativity:** In this study, creativity was treated as both an independent variable during regression analysis and a dependent variable during mean difference testing. This continuous variable comprised three dimensions, obtained from verbal and non-verbal creativity tests.

- Fluency (verbal fluency, non-verbal fluency).
- Flexibility (verbal flexibility, non-verbal flexibility).
- Originality (verbal originality, non-verbal originality).

**School Support:** In this study, SS was considered an independent variable during regression analysis and a dependent variable during mean difference testing.

**Family Support:** In this study, The parenting style scale measures family support. parental warmth /involvement (PI) and parental strictness/supervision (PSu) are the two primary dimensions or subscales of the parenting style (PSs) that were examined. PSs and its dimensions (PI and PSu) were considered both dependent and independent variables. These variables served two purposes: they were dependent variables in mean difference analysis and independent variables in regression analysis.

#### **4.4.3. Moderating Variable**

A moderating variable affects the relationship between a predictor variable (X) and an outcome variable (Y). Moderating variables commonly affect the strength of the relationship between X and Y (King, P.S., 2013). In the present study, FS (PSs) in terms of serves as a moderating variable that influences the relationship between SS (X) and Creativity (Y).

### **4.5. Methods of Data Collection**

#### **4.5.1. Tools for Data Collection**

In the present study, to collect relevant data from the selected representatives, the researcher used four instruments, i.e., a demographic profile of the Participant, the Passi test of Creativity, Parenting Style Scale and School Environment Inventory.

##### **4.5.1.1. Demographic Profile Sheet of the Participant**

This demographic profile sheet developed by Ghorai and Mohakud (2023) was used to collect and record participants' demographic and personal information consisting of 8 items. The items are as follows- 1) School Type, 2) Class, 3) Gender, 4) Family Type, 5) Number of Siblings, 6) Father's Educational Qualification, 7) Mother's Educational Qualification and 8) Family Monthly Income.

##### **4.5.1.2. Passi Test of Creativity (PTC)**

The Passi test of Creativity (PTC) developed by Dr. B. K. Passi (2010). The (PTC) was utilized to assess the creativity levels of secondary school students. The test comprises

six subtests: 1. The Seeing Problems Test, 2. The Unusual Uses Test, 3. The Consequences Test, 4. The Test of Inquisitiveness, 5. The Rectangle Puzzle Test (Test of Persistency) and 6. The Block Test of Creativity (BTC). For the purpose of this study, the PTC was adapted into a bilingual format (Bengali and English) by Ghorai and Mohakud (2023) to ensure accessibility. The first three subtests Seeing Problems Test, Unusual Uses Test, and Consequences Test, are verbal. The Test of Inquisitiveness requires verbal responses based on non-verbal stimuli. The final two subtests, Rectangle Puzzle and Blocks Test of Creativity, are purely non-verbal tasks. The structure of the PTC allows participants freedom in their responses (both qualitative and quantitative) within specified time limits, making it a suitable tool for evaluating divergent thinking.

### **1. The Seeing Problems Test**

This test, developed following the methodology of Guilford et al. (1952), evaluates sensitivity to problems, a key component of creativity as described by Guilford. It measures the ability to recognize and articulate problems related to everyday objects. The test includes four items: Shoes, Pen, Chair, and Postcard. Participants are allotted eight minutes to complete the test, dedicating approximately two minutes to each item.

#### **Scoring Procedure**

- Each accepted response is awarded 1 point, while each rejected response receives 0 points.
- The number of accepted responses across all items determines the total score for the Seeing Problems Test.
- The test measures the variable Fluency.

### **2. The Unusual Uses Test**

This test is modeled on the Brick Uses Test by Guilford et al. (1952) and Torrance's Unusual Uses Test (1962). It evaluates the ability to generate diverse and unconventional uses for familiar items within the participants' psychological and physical environment. The test consists of two items: A piece of Cloth and Bottle. Participants are required to list as many interesting and unusual responses as possible for each item. This test measures the dimensions of Fluency, Flexibility, and Originality. The total time allotted is eight, with four designated for each item.

## Scoring Procedure

The variables assessed in this test are:

- **Unusual Fluency (UF):** Represented by the total number of acceptable responses. Each accepted response is scored 1, and unaccepted responses are scored 0.
- **Unusual Flexibility (UX):** Determined by the number of distinct categories of responses, classified with the assistance of judges. Each unique category scores 1, and unclassified responses score 0.
- **Unusual Originality (UO):** Evaluated based on the rarity of the response using a five-point scale (0–4), where weightage is assigned according to the level of commonness.

This test's total unusual creativity score is the sum of the UF, UX, and UO scores. New responses encountered during the test require the researcher to establish corresponding flexibility and originality weightage categories.

### 3. The Consequences Test

This test is structured following Guilford et al.'s (1952) and Torrance (1962) methodology. It assesses the dimensions of Fluency and Originality. Participants are presented with four hypothetical scenarios and asked to generate possible consequences for each:

1. If human beings start flying like birds
2. If all houses start flying
3. If all people become mad
4. If all females become males

The total time for the test is eight minutes, allowing two minutes for each scenario.

## Scoring Procedure

The variables measured are:

- **Consequences Fluency (CF):** Calculated as the total number of accepted responses. Each accepted response scores 1, and unaccepted responses score 0.
- **Consequences Originality (CO):** Assessed based on indirect or remote responses. Each such response scores 1, and common or direct responses score 0.

This test's total creativity score Consequences creativity is the sum of the CF and CO scores.

### 4. The Test of Inquisitiveness

This test provides an unfamiliar and novel situation to assess inquisitiveness. A metronome, an object capable of producing sound and movement, serves as the test's central stimulus. A playing card displaying the phrase "A FEW CHILDREN CANNOT TOUCH IT" in capital letters is presented alongside the metronome in operation to enhance inquisitiveness. Participants are instructed to imagine and write as many unique questions as possible within six minutes. The questions must be mutually exclusive in content and meaning. While the stimulus is non-verbal, participants can respond in writing in either English or their mother tongue.

#### Scoring Procedure

- Each valid question is awarded a score of 1.
- Duplicate questions, even if valid, are assigned a score of 0.
- The total score for creativity in inquisitiveness is the sum of scores for all valid questions.

### 5. The Rectangle Puzzle Test (Test of Persistency)

This test evaluates the dimension of persistency in creativity, inspired by the insights of Eysenck (1947) and Fernald (1912), who emphasized the role of perseverance in achieving success despite challenges or fatigue. The test involves a performance task using a Rectangle Puzzle consisting of five identical right-angled triangles and five identical quadrilaterals made of plastic. Participants are instructed to construct a rectangle using all ten pieces without leaving any gaps or overlaps. Multiple correct

arrangements are possible, and if a participant completes one configuration before the 40-minute time limit, they are encouraged to rearrange the pieces to form another rectangle. Persistency is measured by the total time spent on the task, recorded in full minutes.

### **Scoring Procedure**

- Persistency (PER) is the primary variable measured.
- If a participant completes one arrangement within three minutes and chooses not to continue, their score is calculated as  $40 - 3 = 37$ .
- If the participant completes two arrangements and continues working, their score is calculated as  $(40 + \text{extra time}) - 3$ .
- The maximum permitted time is 40 minutes, and participants who disengage within three minutes without completing any arrangement receive a score of 0.

## **6. The Block Test of Creativity**

This performance-based test follows the design of the Lowenfeld Mosaic Test (LMT) (1952), as described by Ames and Frances (1962). It provides an opportunity to observe participants creating dynamic designs.

The Blocks Test of Creativity consists of:

- 19 identical cubes (1" x 1" x 1")
- 12 diagonally cut semi-cubes derived from six cubes of the same dimensions.

The materials include two types of blocks and three surface shapes: squares, rectangles, and right-angled triangles. The cubes are painted as follows:

- Top: Red, Bottom: Blue, Face: Yellow, Back: Green, Left: White, Right side: Black.

The semi-cubes include:

- 24 right-angled triangle surfaces
- 24 square surfaces
- 12 rectangular surfaces painted brown.

This creates a total of seven colours that participants can combine in various ways using the two types of blocks and three surface shapes. Participants are tasked with creating as many unique and interesting designs as possible within 10 minutes. They are also required to provide titles for each design.

### **Scoring Procedure**

The test evaluates three dimensions of creativity: Fluency, Flexibility, and Originality.

- **Block Fluency (BF):** Measured by the total number of accepted designs created within the time limit. Each accepted design scores 1, while unaccepted designs score 0.
- **Block Flexibility (BX):** Determined by the number of distinct categories of designs. Each unique category scores 1, while repeated categories score 0.
- **Block Originality (BO):** Scored based on the rarity of designs using a five-point scale (0–4), with weightage assigned according to the frequency of a particular type of design. The scoring methodology mirrors that of the Unusual Uses Test.

The total block creativity score for the Blocks Test is the sum of the BF, BX, and BO scores.

#### **4.5.1.2.1. Scoring Procedure for Passi Tests of Creativity**

The Composite Creativity Score is calculated by summing up the scores obtained by a participant across all six creativity tests. These scores are further divided into:

- **Verbal Creativity Score:** Sum of scores from the first three tests (Seeing Problems Test, Unusual Uses Test, and Consequences Test).
- **Non-verbal Creativity Score:** Sum of scores from the last three tests (Test of Inquisitiveness, Rectangle Puzzle Test, and Blocks Test of Creativity).

The scores for individual creativity attributes Fluency, Flexibility, and Originality are determined as follows:

#### **Fluency**

- **Fluency Score:** Sum of fluency scores from the Seeing Problems Test, Unusual Uses Test, Consequences Test, and Blocks Test.

- **Verbal Fluency Score:** Sum of fluency scores from the verbal creativity tests: Seeing Problems, Unusual Uses, and Consequences Test.
- **Non-verbal Fluency Score:** Fluency score from the Blocks Test of Creativity.

### **Flexibility**

- **Flexibility Score:** Sum of flexibility scores from the Unusual Uses and Blocks Test.
- **Verbal Flexibility Score:** Flexibility score from the verbal creativity test: Unusual Uses Test.
- **Non-verbal Flexibility Score:** Flexibility score from the non-verbal creativity test: Blocks Test of Creativity.

### **Originality**

- **Originality Score:** Sum of originality scores from the Unusual Uses Test, Consequences Test, and Blocks Test.
- **Verbal Originality Score:** Sum of originality scores from the verbal creativity tests: Unusual Uses Test and Consequences Test.
- **Non-verbal Originality Score:** Originality score from the Blocks Test of Creativity.

#### **4.5.1.2.2. Technical Information about the Scale**

The original scale has demonstrated a high reliability coefficient and the content validity of established through experts opinion. Prior research has revalidated this tool, on reported similar or even higher coefficients. Prior to its application in the present study, a pilot study was conducted by the researcher on 140 Secondary School Students to ensure the tool's reliability and suitability. The validity and reliability coefficients have been presented in the following tables.

**Table No. 4.5. Reliability Coefficients of PTC**

<b>Name of the Tools</b>	<b>Name of the Sub-Test</b>	<b>Test-Retest Reliability</b>	<b>Split-Half Reliability <math>r_{11}</math></b>
Passi Tests of Creativity	i. Seeing Problems Test	0.68	0.88
	ii. Unusual Uses Test	0.97	0.51
	iii. Consequences Test	0.71	0.80
	iv. Test of Inquisitiveness	0.74	--
	v. Rectangle Puzzle Test	0.91	--
	vi. Blocks Test of Creativity	0.83	--
	<b>Creativity (Total)</b>	0.92	

**Table No. 4.6. Concurrent Validity of the PTC**

	<b>Name</b>	<b>Criteria Measures</b>			
		<b>Things Done-On-Your-Own</b>	<b>Non-verbal Intelligence</b>	<b>Verbal Intelligence</b>	<b>Achievement</b>
<b>P T C</b>	i) Seeing Problems Test	0.43	0.29	0.23	0.35
	ii) Unusual Uses Test	0.59	0.32	0.38	0.34
	iii) Consequences Test	0.81	0.04	0.27	0.30
	iv) Test of Inquisitiveness	0.95	0.81	0.34	0.22
	v) Rectangle Puzzle Test	0.68	0.16	0.26	0.29
	vi) Blocks Test of Creativity	0.60	0.05	0.01	0.07
	<b>Creativity (Total)</b>	0.46	0.27	0.38	0.35

**Table No. 4.7. Reliability Coefficients of the subtests of PTC based on pilot study**

Name of the Test	N	Cronbach's $\alpha$
i) Seeing Problems Test	140	0.895
ii) Unusual Uses Test		0.624
iii) Consequences Test		0.842

#### 4.5.1.3. School Environment Inventory (SEI)

The School Environment Inventory developed by Dr. K. S. Mishra (2012) was utilized in this study to measure SS. It is a Likert-type scale designed to assess various dimensions of the school environment. The inventory comprises 70 items categorized into six dimensions: Creative Stimulation (CRS), Cognitive Encouragement (COE), Permissiveness (PER), Acceptance (ACC), Rejection (REJ), and Control (CON). Each item offers five response options: Always (4 marks), Often (3 marks), Sometimes (2 marks), Very rarely (1 mark), and Never (0 marks). In this study, the researcher utilized only the CRS subscale, which includes 20 items and was used to measure the school's support for fostering creativity among secondary school students. The researcher and his supervisor translated and adapted the tool into Bengali language in 2022. The tool is designed for flexible administration, with no time limit, and can be used in both individual and group settings. Students respond by ticking the appropriate box, with higher scores indicating better opportunities provided by teachers to stimulate creative thinking and lower scores reflecting inadequate support.

**Table No. 4.8. Scoring Procedure for SEI**

Response	Always	Often	Sometime	Very rarely	Never
Score	4	3	2	1	0

##### 4.5.1.3.1. Technical Information about the SEI

The reliability coefficient of 0.919 and content validity of the original scale have been confirmed by judges and experts. Previous study has consistently reported similar or even higher reliability coefficients, validating the scale's robustness. In the context of this study, the researcher conducted a pilot study involving 140 representatives to further confirm the tool's reliability and validity for the specific population. The pilot study aimed to evaluate the appropriateness of the scale in capturing relevant data, ensuring its

suitability for the main study. Validity and reliability coefficient of the creative stimulation school environment inventory has been presented in the below table.

**Table No. 4.9. Validity and Reliability Coefficient of the SEI**

<b>Description</b>	<b>Dimension of the Scale</b>	<b>Validity</b>	<b>Reliability coefficient</b>
Dr. Karuna Shankar Misra (2012).	Creative Stimulation	Experts Judgment (Content validity)	0.919 (Split-half)
Pilot study	Creative Stimulation	Content validity	0.855 (Split-half)
			0.803 (Cronbach's $\alpha$ )

#### **4.5.1.4. Parenting Style Scale**

The parenting scale scale was originally developed by Lamborn et al. (1991). For data collection, the researcher utilized the Bengali-translated version of the tool by Ghorai and Mahakud (2023). This Likert-type scale consists of 19 items and was divided into two dimensions: Parental Warmth/Involvement and Parental Strictness/Supervision.

##### **4.5.1.4.1. Parental Warmth/Involvement:**

- Comprises items 1 to 10.
- **Response options:**
  - Items 1-5: Two response options ("Usually true" and "Usually false").
  - Items 6-8: Three response options ("Never," "Sometimes," and "Usually").
  - Items 9-10: Four response options ("Almost every day," "A few times a week," "A few times a month," and "Almost never").

##### **4.5.1.4.2. Parental Strictness/Supervision:**

- Comprises items 11 to 19.
- **Response options:**
  - Items 11-12: Seven response options ("Not allowed out," "Before 8:00," "8:00 to 8:59," "9:00 to 9:59," "10:00 to 10:59," "11:00 or later," and "As late as I want").
  - Items 13-14: Two response options ("Yes" and "No").
  - Items 15-17: Three response options ("Don't try," "Try a little," and "Try a lot").

- Items 18-19: Three response options ("Don't know," "Know a little," and "Know a lot").

This structured approach allowed for a comprehensive assessment of the two dimensions of parenting style, capturing a range of parental behaviours and practices.

For fathers, the involvement score was calculated by summing the scores of the 10 involvement-related items, while their supervision score was obtained from the 9 supervision-related items. Similarly, mothers' involvement and supervision scores were determined using the same sets of items.

The **Parental Involvement Score** was calculated as the average of the fathers' and mothers' involvement scores, and the **Parental Supervision Score** was derived similarly from their supervision scores. These scores were categorized into two levels based on their median values:

- Scores up to the median were classified as **low involvement** or **low supervision**.
- Scores above the median were classified as **high involvement** or **high supervision**.

Using these categories, four parenting styles were identified:

1. **Authoritative Parenting Style:** High involvement and high supervision.
2. **Authoritarian Parenting Style:** Low involvement and high supervision.
3. **Indulgent Parenting Style:** High involvement and low supervision.
4. **Neglectful Parenting Style:** Low involvement and low supervision.

This classification provided a framework for analyzing parenting behaviours based on distinct combinations of involvement and supervision levels.

**Table No. 4.10. The Dimensions and their Respective Items and the Scoring Procedure for the Parenting Style Scale**

<b>Dimensions of Parenting Style Scale</b>			
<b>SL.NO.</b>	<b>Dimension of the Scale</b>	<b>Serial-wise item No.</b>	<b>No. of Items</b>
I	Parental Warmth/Involvement	1,2,3,4,5,6,7,8,9,10	10
II	Parental Strictness/Supervision	11,12,13,14,15,16,17,18,19	9
		Total	19

<b>Scoring Parental of Warmth/Involvement items</b>						
<b>Scoring System for five responses</b>						
Usually true			Usually false			
2			1			
<b>Scoring System for three responses</b>						
Never		Sometimes			Usually	
1		2			3	
<b>Scoring System for two responses</b>						
almost every day	a few times a week		a few times a month		almost never	
4	3		2		1	
<b>Scoring Parental of Strictness/Supervision items</b>						
<b>Scoring System for two responses</b>						
Not allowed out	Before 8:00	8:00 to 8:59	9:00 to 9:59	10:00 to 10:59	11:00 or later	As late as I want
7	6	5	4	3	2	1
<b>Scoring System for one response</b>						
Yes			No			
2			1			
<b>Scoring System for three responses</b>						
Don't try		Try a little			Try a lot	
1		2			3	
<b>Scoring System for three responses</b>						
Don't know		Know a little			Know a lot	
1		2			3	

#### 4.5.1.4.3. Technical Information about the Scale

The original Scale's Cronbach's Alpha reliability coefficients was  $\alpha = 0.72$  for parental warmth/involvement and  $\alpha = 0.76$  for parental strictness/supervision. Various other researchers also used this Scale and reported similar or higher reliability coefficients than the original study. While using the tool in this study, the researcher conducted a pilot study on 140 representatives to ensure the test's reliability and usability. The reliability coefficients of the presenting style scale has been presented in the below table.

**Table No. 4.11. Reliability Coefficient of the PSs Scale**

<b>Tool</b>	<b>Dimension of the Scale</b>	<b>Reliability coefficient</b>
Lamborn et al. (1991)	Parental Warmth/Involvement	Cronbach's $\alpha$ - 0.72
	Parental Strictness/Supervision	Cronbach's $\alpha$ - 0.76
Sing and Mahakud (2023)	Parental Warmth/Involvement	Split-half- 0.970
	Parental Strictness/Supervision	Cronbach's Alpha- 0.937
Pilot Study	Parental Warmth/Involvement	Cronbach's Alpha- 0.732
	Parental Strictness/Supervision	Cronbach's Alpha- 0.867

#### **4.6. Procedure of Data Collection**

To collect data for this study, the researcher at first task permission from the school authority, then he personally met participants introduced himself and explain the purpose of this study and approached them for voluntary participation. After obtaining oral consent, participants were requested to read and sign a comprehensive consent form. Following this, participants received a set of questionnaires, including the demographic profile, the Parenting Style Scale, the School Environment Inventory, and the Passi Test of Creativity. Clear instructions were given to ensure participants read and respond to each item carefully. The researcher commenced data collection after receiving a bona fide letter from the research supervisor. While 581 participants approached, and 544 returned fully completed questionnaires, ensuring a robust dataset. This data collection procedure was carried out between March 30, 2023, and September 8th, 2023, adhering to ethical guidelines and maintaining high standards for data integrity. After the successful data collection, proper scoring was done, considering each tool's scoring system. After that, a proper scoring sheet was prepared for statistical analysis.

#### **4.7. Data Screening and Tabulation**

Following completion of the survey, participants' answers were carefully examined to make sure every option had been filled out. The screening criteria included completion of the demographic profile sheet, PSS, SEI and PTC. To ensure data integrity and confidentiality, this file was safely kept on the researcher's PC. In order to satisfy the goals of the study, the data was then processed, cleaned, tabulated in a methodical and sequential manner to aid in additional analysis and interpretation. Data from 544 secondary school students was meticulously recorded and organized using an MS Excel

sheet. This structured approach to data tabulation provided a comprehensive foundation for investigating the research goals and supported subsequent analytical stages.

#### **4.8. Data Analysis Techniques**

The data was analysed by the researcher using a different tools and techniques. SPSS and MS Excel were used for the quantitative analysis. The data normality was checked by Kolmogorov-Smirnov, Skewness, Kurtosis and the Shapiro-Wilk test (Hatem et al., 2022; Okeniyi et al., 2020). Descriptive statistics like mean score, SD and also used mean rank, frequency, percentage analysis, and graphical representation. Further, inferential statistics like the chi-square test, Pearson's Correlation, independent samples t-test, one-way ANOVA, general regression analysis, multiple regression analysis and moderator analysis were done through regression analysis in Process Macro in SPSS. Hypotheses are tested using these statistics (Barnes, & Lewin, 2005).

#### **4.9. Ethical Considerations**

Similar to other scientific fields, social science research requires careful attention to ethical considerations (De Wet, 2010; Broom, 2006). The researcher was concerned about that in the present study. Everyone, including parents, students, and school heads, was aware of the study's objectives, methodology, and procedures. First of all, permission was taken from the research supervisor to collect data for the research. Written consent was taken from the school heads, the parents/guardians and also the participants. Participation was entirely voluntary. Participants may withdraw from the study at any time. No technique or intervention was used by the researcher that might have harmed the participants' physical or mental health.

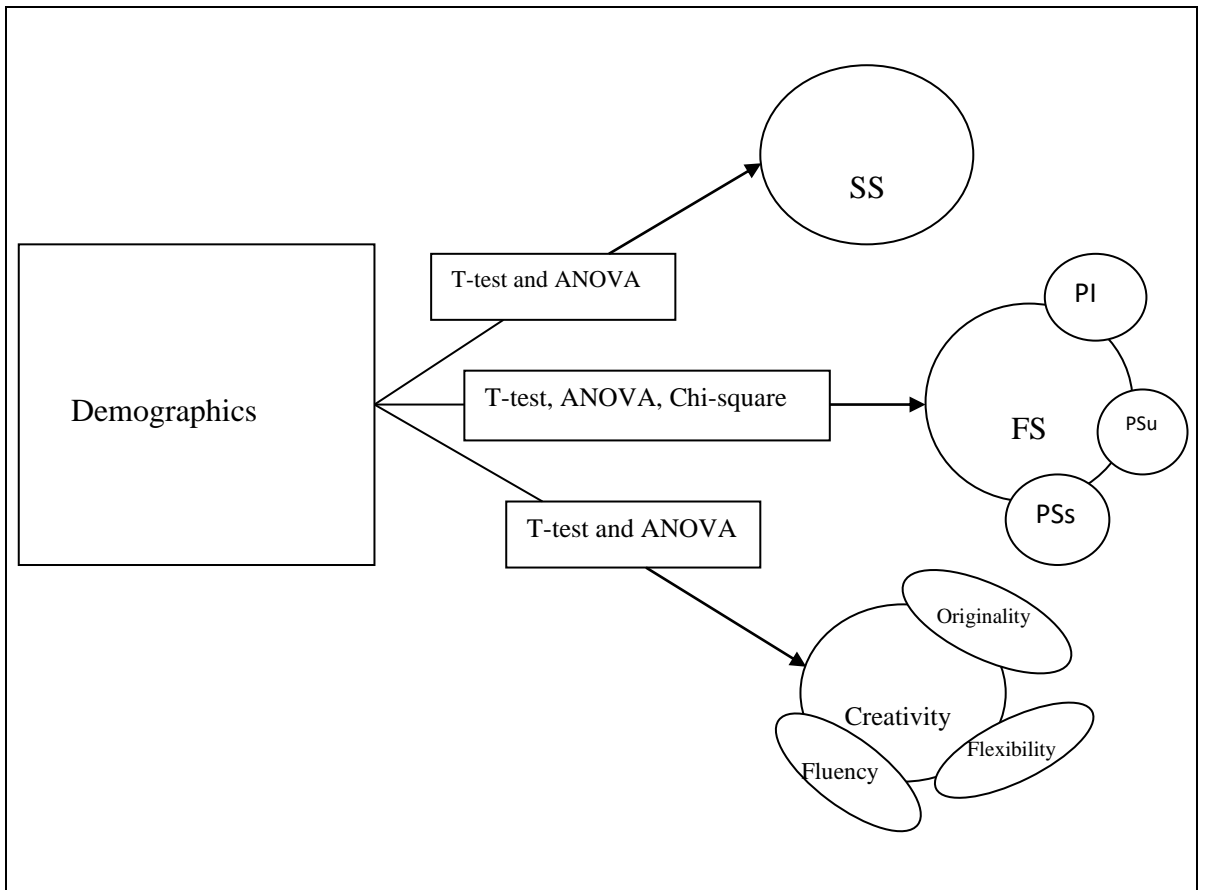


Fig. 4.4. Analysis Design Relating to the Influence of Demographic Factors on SS, FS and Creativity

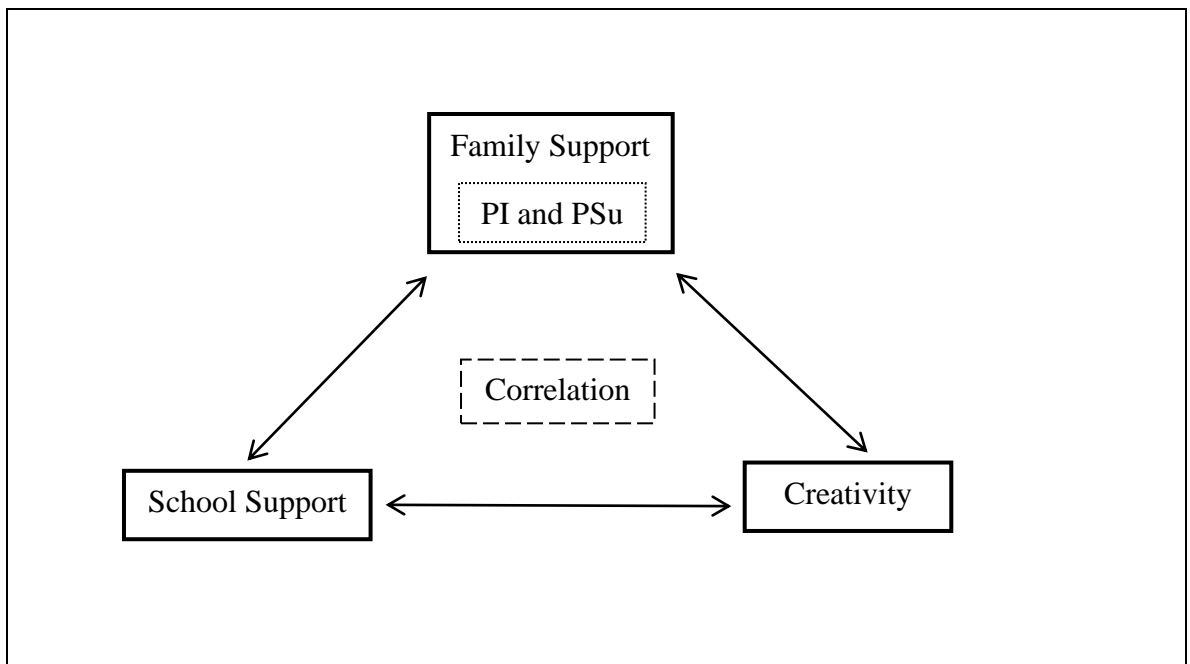


Fig. 4.5. Analysis Design (Correlation)

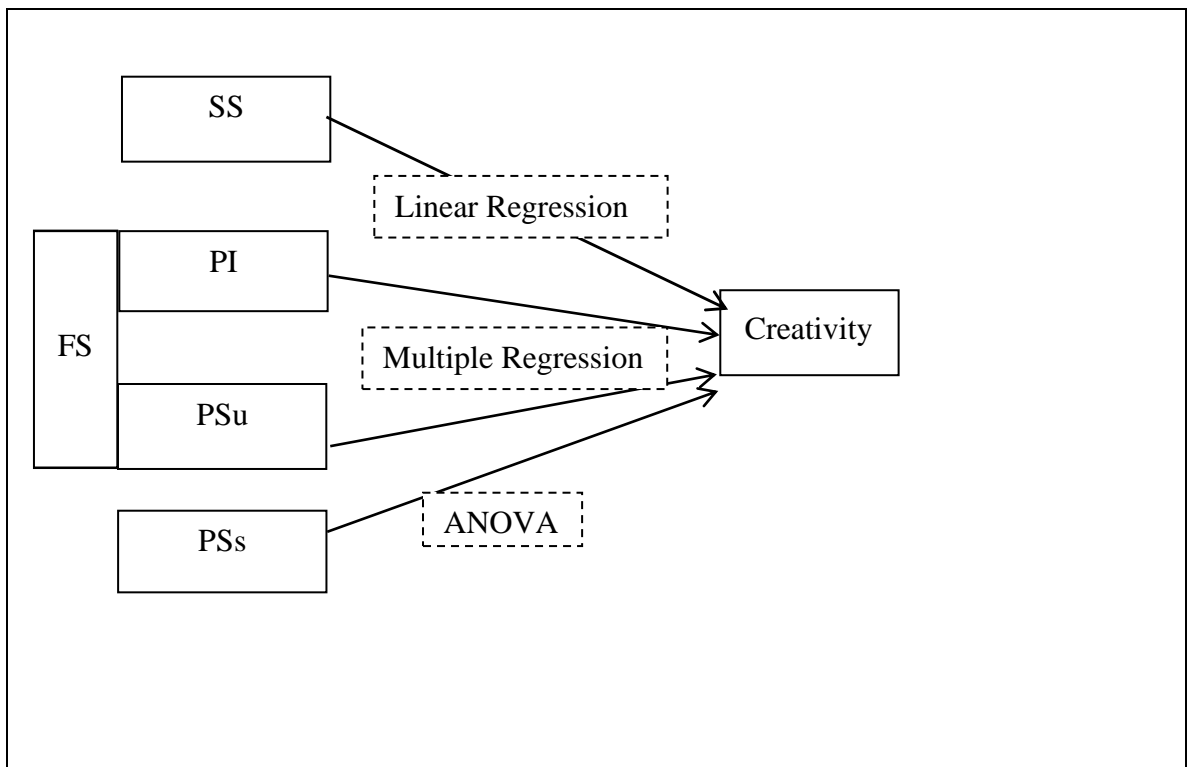


Fig. 4.6. Analysis Design (Regression analysis)

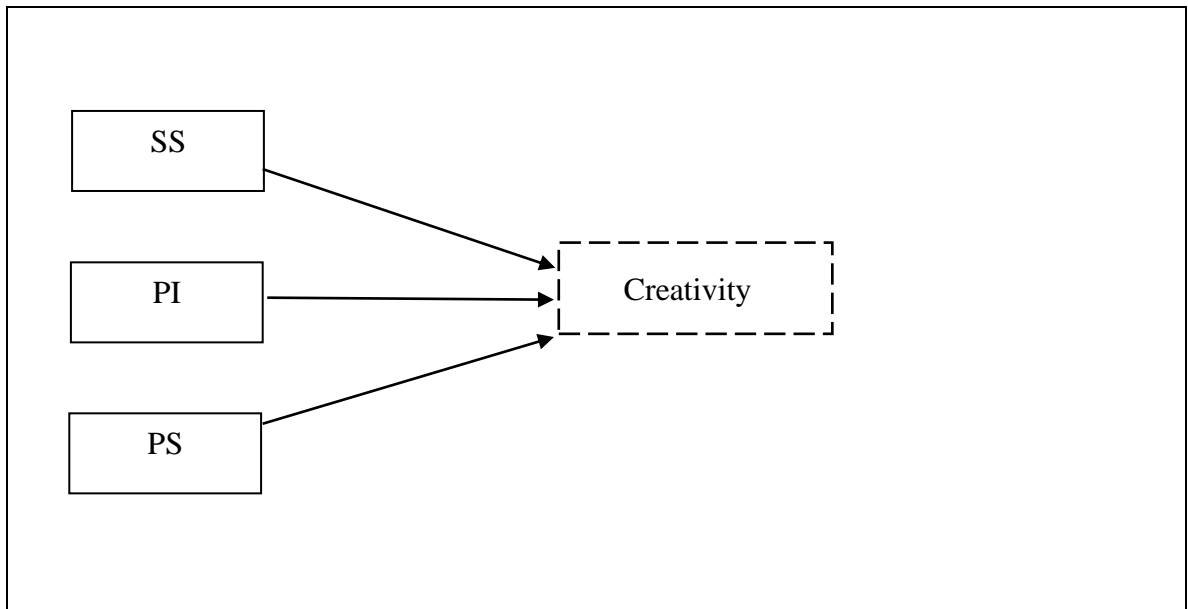


Fig. 4.7. Analysis Design (Multiple Regression analysis)

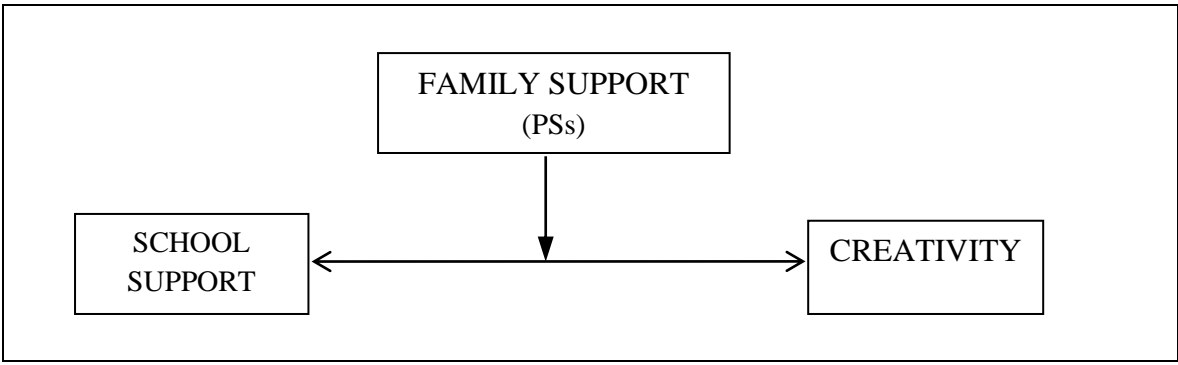


Fig. 4.8. Analysis Design (Moderation)

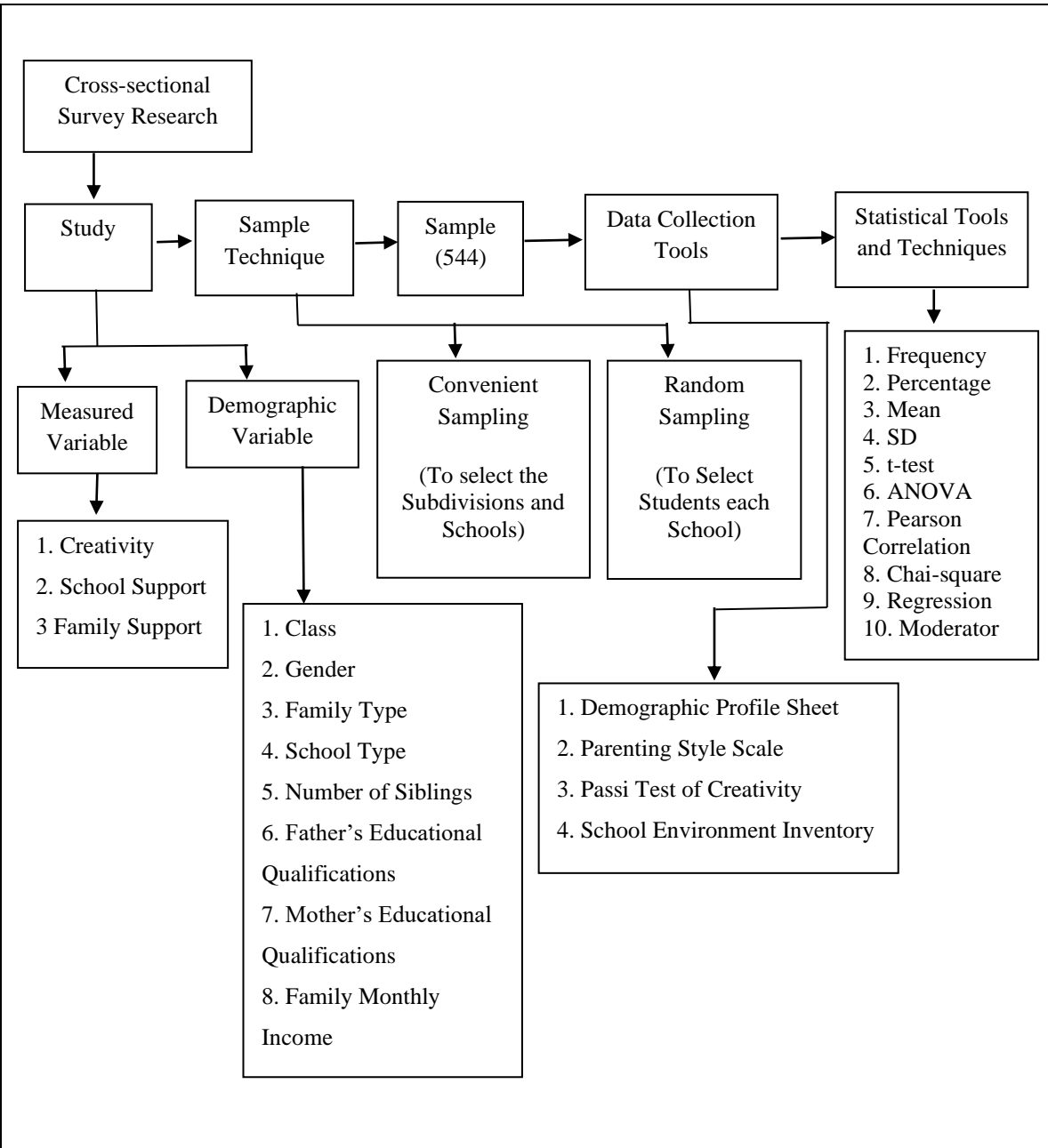


Fig. 4.9. Research Design

**CHAPTER-V**  
**ANALYSIS AND INTERPRETATION**  
**OF DATA**

## CHAPTER-V

### ANALYSIS AND INTERPRETATION OF DATA

#### 5.1.0. Introduction

The crucial elements of every research are data analysis, interpretation, and presentation, which are covered in this chapter. The chapter serves as the foundation for the entire study by analyzing collected data using various kinds of statistical techniques. As the foundation for conclusions from research, appropriate data analysis and interpretation are essential. So, without this section, the research would never have been finished.

#### 5.2.0. Analysis and Interpretations

##### 5.2.1. Data Normality

Before proceeding to descriptive statistics and hypothesis testing, the researcher first evaluated the normality of the data for SS score, PI, PSu, creativity, fluency, flexibility, and originality in verbal test, creativity, fluency, flexibility, and originality in non-verbal test. The evaluation was conducted using the Kolmogorov-Smirnov, Shapiro-Wilk, Skewness, and Kurtosis. The results are shown in table No. 5.1 (A) and (B).

**Table No. 5.1. (A): Showing the Kolmogorov-Smirnov and Shapiro-Wilk Test Statistics**

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
SS	.091	544	.000	.955	544	.000
PI	.094	544	.000	.933	544	.000
PSu	.110	544	.000	.937	544	.000
Fluency in Verbal Test	.061	544	.000	.977	544	.000
Flexibility in Verbal Test	.142	544	.000	.937	544	.000
Originality in Verbal Test	.099	544	.000	.952	544	.000
Creativity in Verbal Test	.059	544	.000	.979	544	.000
Fluency in Non-Verbal Test	.142	544	.000	.937	544	.000

Flexibility in Non-Verbal Test	.119	544	.000	.878	544	.000
Originality in Non-Verbal Test	.047	544	.005	.985	544	.000
Creativity in Non-Verbal Test	.065	544	.000	.986	544	.000
Fluency	.055	544	.001	.982	544	.000
Flexibility	.094	544	.000	.957	544	.000
Originality	.048	544	.004	.989	544	.001
Creativity	.036	544	.083	.992	544	.004

**Table No. 5.1. (B): Representing the Skewness and Kurtosis Statistics and its Standard Error of Creativity, SS and FS**

	N	Skewness		Kurtosis	
		Statistic	Std. Error	Statistic	Std. Error
SS	544	-.788	.105	.539	.209
PI	544	.087	.105	5.397	.209
PSu	544	-.716	.105	-.170	.209
Fluency in Verbal Test	544	.550	.105	.031	.209
Flexibility in Verbal Test	544	.785	.105	.259	.209
Originality in Verbal Test	544	.887	.105	.899	.209
Creativity in Verbal Test	544	.548	.105	.135	.209
Fluency in Non-Verbal Test	544	.004	.105	-1.251	.209
Flexibility in Non-Verbal Test	544	1.939	.105	10.016	.209
Originality in Non-Verbal Test	544	.269	.105	-.245	.209
Creativity in Non-Verbal Test	544	-.021	.105	-.632	.209
Fluency	544	.497	.105	.086	.209
Flexibility	544	.872	.105	1.207	.209
Originality	544	.348	.105	-.065	.209
Creativity	544	.277	.105	.209	.209

### Interpretation

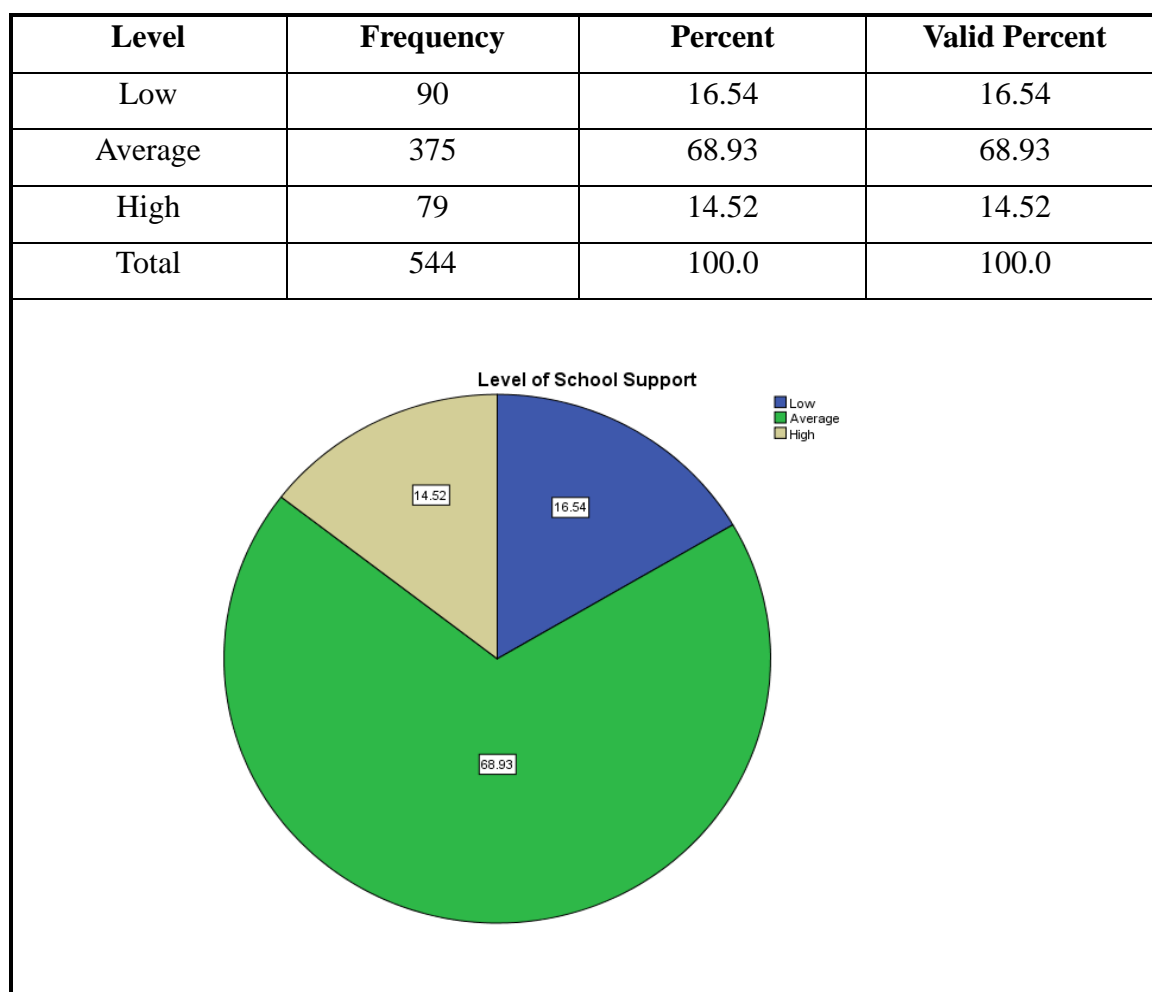
The Kolmogorov-Smirnov and Shapiro-Wilk tests evaluate whether the sample units follow a normal distribution. The results showed that the *p*-value (sig) was less than the 0.05 level of significance for SS, as well as PI, PSu, creativity, fluency, flexibility, and originality in verbal test, creativity, fluency, flexibility, and originality in non-verbal test.

This suggests that the data distribution is non normal. Furthermore, the researcher calculated the distribution's Skewness and Kurtosis values. Data is considered normal in the Skewness and Kurtosis tests when the Skewness statistics is 0 and the Kurtosis statistics is 0.263. The deviation of these values indicates the non-normality of the data. However, some empirical evidence suggests that deviations of 1 to 7 in statistics can be considered normal or near normal. Curran et al. (1996) considered variations up to 2 for Skewness and & 7 for Kurtosis, while Kline (2005) accepted variations up to 3 for Skewness and 10 for Kurtosis. In this study, the researcher followed the guidelines of Curran at al. (1996) and Kline (2005) and considered the distributions normal among the representatives.

## 5.2.2. Distribution of SS and FS

### 5.2.2.1. Level of SS among Secondary School Students

**Table No. 5.2. and Fig. 5.1. Depicting the level of SS among secondary school students**



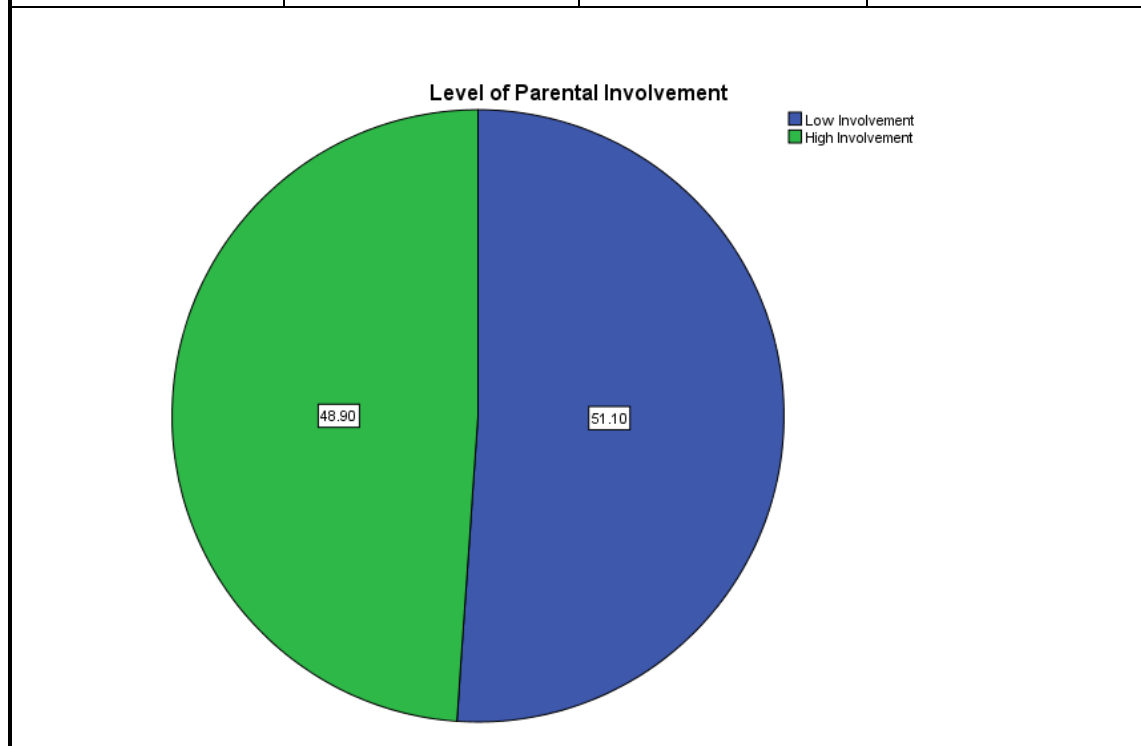
### Interpretation

Table No. 5.2. and Fig. 5.1. presents the distribution of SS levels among secondary school students. The majority of secondary school students 68.93% indicated an average level of SS. In comparison, 16.54% of secondary school students experienced low level of SS. A smaller portion, 14.52% of the secondary school students reported high level of SS.

#### 5.2.2.2. Level of PI among Secondary School Students

Table No. 5.3. and Fig. 5.2. Depicting the level of PI among secondary school students

Level	Frequency	Percent	Valid Percent
Low	278	51.10	51.10
High	266	48.90	48.90
Total	544	100.0	100.0

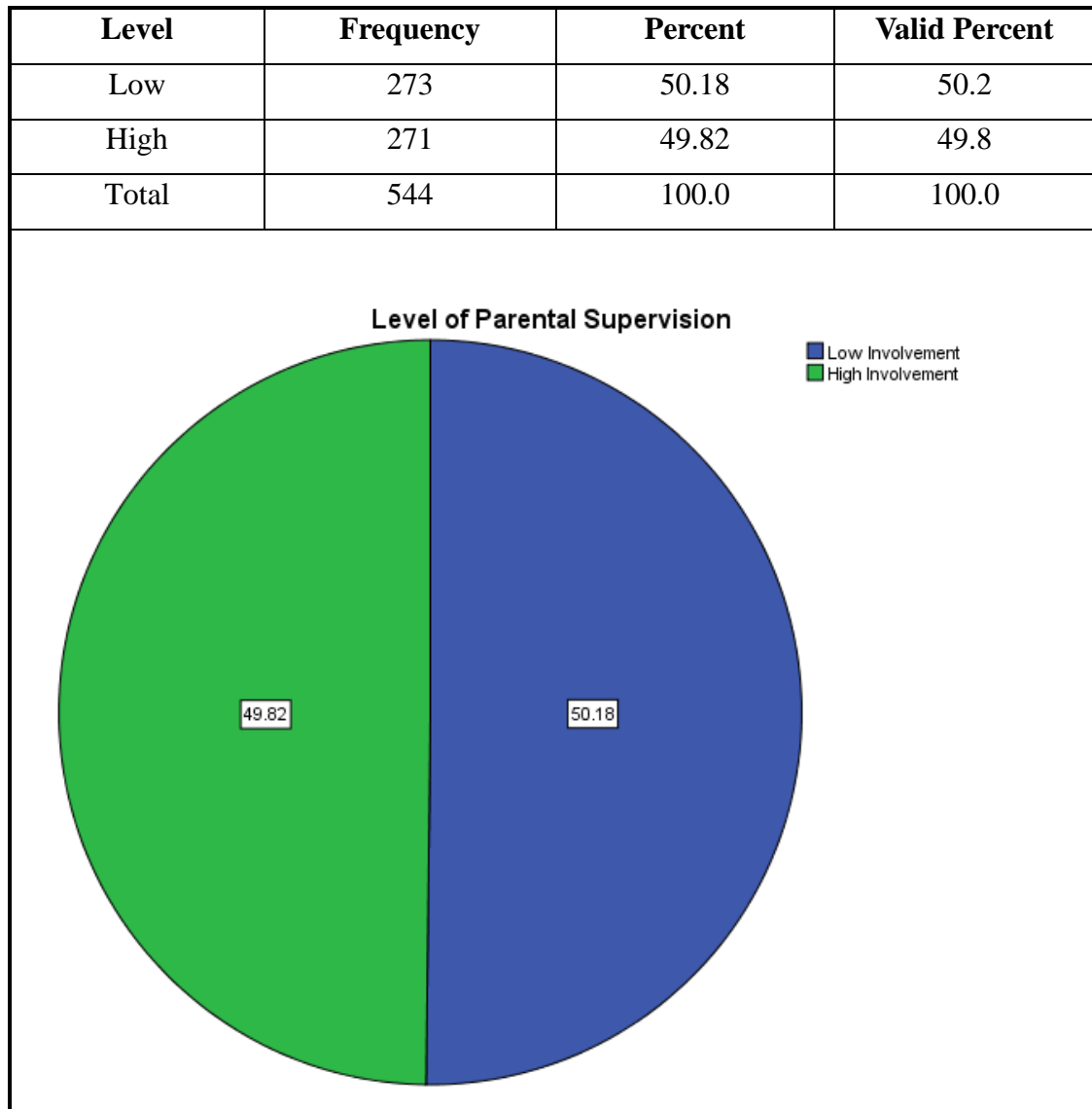


### Interpretation

Table No. 5.3. and Fig. 5.2. presents the distribution of PI levels among secondary school students. 51.10% of students experienced a low level of PI and 48.90% of students experienced a high level of PI.

### 5.2.2.3. Level of PSu among Secondary School Student

**Table No. 5.4. and Fig. 5.3. Depicting the level of PSu among secondary school students**



#### **Interpretation**

Table No. 5.4. and Fig. 5.3 presents the distribution of PSu levels among secondary school students. Among 544 students, 50.18% of secondary school students reported low PSu and 49.82% of secondary school students experienced high level of PSu.

### 5.2.3. Variations in SS among the secondary school students in WB concerning the demographics

**H<sub>0</sub>1:** *There are no significant variations in SS among the secondary school students in WB concerning the demographics (school type, class, gender, family type, number of siblings, parental educational qualification, and family monthly income).*

#### 5.2.3.1. Variations in SS concerning school type

**Table No. 5.5. (A): School Type –wise Mean Comparison of SS**

	School Type	N	Mean	SD	SEM	F	df	p
SS	Girls' School	147	60.15	9.247	.763	21.868	2/541	<b>.000</b>
	Boys' School	98	51.85	12.040	1.216			
	Co-ed school	299	60.00	11.641	.673			
	Total	544	58.57	11.542	.495			

**Table No. 5.5. (B): School Type -wise Multiple Comparison of SS**

Dependent Variable	(I) School Type	(J) School Type	Mean Difference (I-J)	Std. Error	Sig.
SS	Girls' school	Boys' school	8.303*	1.451	.000
		Co-ed school	.146	1.120	.896
	Boys' school	Girls' school	-8.303*	1.451	.000
		Co-ed school	-8.156*	1.295	.000
	Co-ed school	Girls' school	-.146	1.120	.896
		Boys' school	8.156*	1.295	.000

#### Interpretation

The above Table No. 5.5 (A) shows that in the SS scores, out of 544 secondary school students, the mean score of 147 secondary school students from girls' schools, 98 from boys' schools, 299 from co-ed schools are 60.15, 51.85, and 60.00 respectively. It means that the secondary school students from the girls' schools have more SS score than the other category secondary school students. Further, the one-way ANOVA shows that (F=21.868, df= 2/541 & p= .000) the result is significant. Hence, it indicates significant differences in SS score among secondary school students concerning their School Type. Further, the multiple comparisons [see Table No. 5.5 (B)] on SS score through LSD test

showed that the actual differences lie between girls' school and boys' school ( $p=.000<0.05$ ), and boys' school and co-ed school ( $p=.000<0.05$ ) secondary school students.

### 5.2.3.2. Variations in SS concerning class

**Table No. 5.6. Class-wise Mean comparison of SS**

	Class	N	Mean	SD	SEM	t	df	p
SS	Nine	288	59.39	11.546	.680	1.751	542	.081
	Ten	256	57.66	11.491	.718			

#### Interpretation

Table No 5.6. shows that in the case of SS score, out of 544 secondary school students, the mean score of 288 ninth grade secondary school students (i.e., 59.39) is greater than the mean score of 256 tenth grade secondary school students (i.e., 57.66). This means that ninth grade students have more SS score than tenth grade students. Further, the t-test shows that ( $t= 1.751$ ,  $df= 542$  &  $p= .081>0.05$ ) the result is not significant. Hence, it means no significant difference in SS score among secondary school students concerning their class.

### 5.2.3.3. Variations in SS concerning gender

**Table No. 5.7. Gender-wise Mean Comparison of SS**

	Gender	N	Mean	SD	SEM	t	df	p
SS	Male	258	55.69	13.023	.811	-5.684	542	<b>.000</b>
	Female	286	61.17	9.307	.550			

#### Interpretation

Table No. 5.7. shows that in the case of SS score, out of 544 secondary school students, the mean score of 286 female secondary school students (i.e., 61.17) is greater than the mean score of 258 male secondary school students (i.e., 55.69). It means that female students have more SS score than male students. Further, the t-test shows that ( $t= -5.684$ ,  $df= 542$  &  $p= .000<0.05$ ) the result is significant. Hence, it means significant difference in SS score among secondary school students with regard to their gender.

#### 5.2.3.4. Variations in SS concerning Family Type

**Table No. 5.8. Family Type-wise Mean Comparison of SS**

	Family Type	N	Mean	SD	SEM	t	df	p
SS	Joint Family	185	59.38	10.873	.799	1.168	542	.243
	Nuclear or Broken Family	359	58.16	11.866	.626			

#### Interpretation

Table No. 5.8. shows that in the case of SS score, out of 544 secondary school students, the mean score of 185 secondary school students from joint family (i.e., 59.38) is greater than the mean score of 359 secondary school students from nuclear or broken Family (i.e., 58.16). It means that secondary school students from joint family have higher SS score than nuclear or broken Family. Further, the t-test shows that ( $t= 1.168$ ,  $df= 542$  &  $p= .243 > 0.05$ ) the result is not significant. Hence, it means no significant differences in SS score among secondary school students with regard to their family types.

#### 5.2.3.5. Variations in SS concerning Number of Siblings

**Table No. 5.9. Number of Siblings -wise Mean Comparison of SS**

	Number of Siblings	N	Mean	SD	SEM	F	df	p
SS	Single Child	122	57.41	12.621	1.143	2.072	3/ 540	.103
	Having One Sibling	311	58.99	11.386	.646			
	Having Two Siblings	69	60.49	9.992	1.203			
	Having Three to Six Siblings	42	55.69	11.328	1.748			
	Total	544	58.57	11.542	.495			

#### Interpretation

The above Table No. 5.9. shows that in the SS score, out of 544 secondary school students, the mean score of 122 secondary school students with single child, 311 students having one sibling, 69 students having two siblings and 42 students having three to six siblings are 57.41, 58.99, 60.49, and 55.59 respectively. It means that the secondary school students having two siblings have more SS score than the other category of secondary school students. Further, the one-way ANOVA shows that ( $F=2.072$ ,  $df= 3/540$  &  $p= .103$ ) the result is not significant. Hence, it indicates no significant differences in SS score among secondary school students concerning their number of siblings.

### 5.2.3.6. Variations in SS concerning Father's Educational Qualifications

**Table No. 5.10. Father's Educational Qualifications-wise Mean Comparison of SS**

	<b>Father's Educational Qualifications</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SEM</b>	<b>F</b>	<b>df</b>	<b>p</b>
<b>SS</b>	Elementary (Up to Class VIII)	139	56.82	11.248	.954	2.184	2/541	.114
	Secondary and Higher Secondary (Class-IX to XII)	286	59.10	11.400	.674			
	Graduation and Above	119	59.35	12.096	1.109			
	Total	544	58.57	11.542	.495			

#### **Interpretation**

The above Table No. 5.10. shows that in the SS score, out of 544 secondary school students, the mean score of 139 secondary school students with elementary educational qualification father's, 286 secondary school students with Secondary and Higher Secondary educational qualification father's, and 119 secondary school students with graduation and above educational qualification fathers are 56.82, 59.10 and 59.35 respectively. It means that the secondary school students with graduation and above educational qualification fathers have more SS score than the other category of secondary school students. Further, the one-way ANOVA shows that ( $F=2.184$ ,  $df= 2/541$  &  $p=.114$ ) the result is not significant. Hence, it indicates no significant differences in SS score among secondary school students concerning their father's educational qualification.

### 5.2.3.7. Variations in SS concerning Mother's Educational Qualifications

**Table No. 5.11. (A): Mother's Educational Qualifications-wise Mean Comparison of SS**

	<b>Mother's Educational Qualifications</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SEM</b>	<b>F</b>	<b>df</b>	<b>p</b>
<b>SS</b>	Elementary (Up to Class VIII)	155	56.71	10.811	.868	3.185	2/541	<b>.042</b>
	Secondary and Higher	322	59.53	11.556	.644			

	Secondary (Class-IX to XII)							
	Graduation and Above	67	58.27	12.693	1.551			
	Total	544	58.57	11.542	.495			

**Table No. 5.11. (B): Mother's Educational Qualifications-wise Multiple Comparison of SS**

Dependent Variable	(I) Mother's Educational Qualification	(J) Mother's Educational Qualification	Mean Difference (I-J)	Std. Error	Sig.
SS	Elementary (Up to Class VIII)	Secondary and Higher Secondary (Class-IX to XII)	-2.824*	1.124	.012
		Graduation and Above	-1.559	1.681	.354
	Secondary and Higher Secondary (Class-IX to XII)	Elementary (Up to Class VIII)	2.824*	1.124	.012
		Graduation and Above	1.266	1.544	.413
	Graduation and Above	Elementary (Up to Class VIII)	1.559	1.681	.354
		Secondary and Higher Secondary (Class-IX to XII)	-1.266	1.544	.413

### Interpretation

The above Table No. 5.11. (A) shows that in the SS score, out of 544 secondary school students, the mean score of 155 secondary school students with elementary educational qualification mother's, 322 secondary school students with secondary and higher secondary educational qualification mother's, and 67 secondary school students with graduation and above educational qualification mother's are 56.71, 59.53, and 58.27 respectively. It means that the secondary school students with secondary and higher secondary educational qualification mother's have more SS score than the other category of secondary school students. Further, the one-way ANOVA shows that ( $F=3.185$ ,  $df=$

2/541 &  $p = .042$ ) the result is significant. Hence, it indicates significant differences in SS score among secondary school students concerning their mother's educational qualification. Further, the multiple comparisons [see Table No. 5.11. (B)] on SS score through LSD test showed that the actual differences lie between elementary and secondary and higher secondary ( $p = .012 < 0.05$ ) educational qualification father's of secondary school students.

### 5.2.3.8. Variations in SS concerning Family Monthly Income

**Table No. 5.12. Family Monthly Income-wise Mean Comparison of SS**

	<b>Family Monthly Income</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SEM</b>	<b>F</b>	<b>df</b>	<b>p</b>
<b>SS</b>	6,174 - Low	179	57.78	9.884	.739	1.335	4/ 539	.256
	6,175 - 18,496	180	59.81	12.296	.916			
	18,497 - 30,830	76	58.91	12.280	1.409			
	30,831 - 46,128	40	55.78	11.874	1.877			
	More than 46,189	69	58.68	12.348	1.487			
	Total	544	58.57	11.542	.495			

#### **Interpretation**

The above Table No. 5.12. shows that in the SS score, out of 544 secondary school students, the mean score of 179 secondary school students with 6,174 – Low family monthly income, 180 students with 6,175 - 18,496 family monthly income, 76 students with 18,497 - 30,830 family monthly income, 40 students with 30,831 - 46,128 family monthly income, and 69 students with More than 46,189 family monthly income are 57.78, 59.81, 58.91, 55.78 and 58.68 respectively. It means that the secondary school students with 6,175 - 18,496 family monthly income have more SS score than the other category of secondary school students. Further, the one-way ANOVA shows that ( $F = 1.335$ ,  $df = 4/539$  &  $p = .256$ ) the result is not significant. Hence, it indicates no significant differences in SS score among secondary school students concerning their family monthly income.

### 5.2.4. Variations in FS (in term of PI and PSu) across Demographics among the Secondary School Students in WB

**Ho2:** *There are no significant variations in family support (in terms of PI and PSu) among the secondary school students in WB concerning the demographics (school type, class, gender, family type, number of siblings, parental educational qualification, and family monthly income).*

#### 5.2.4.1. Variations in PI and PSu concerning School Type

**Table No. 5.13. (A) School Type-wise Mean Comparison of PI and PSu**

	Type of Schools	N	Mean	SD	SEM	F	df	p
<b>PI</b>	Girls' School	147	23.82	2.15773	.17797	4.676	2/ 541	<b>.010</b>
	Boys' School	98	22.93	2.31606	.23396			
	Co-ed School	299	23.46	2.26753	.13113			
	Total	544	23.47	2.26249	.09700			
<b>PSu</b>	Girls' School	147	30.34	3.66668	.30242	21.547	2/ 541	<b>.000</b>
	Boys' School	98	27.05	4.17990	.42223			
	Co-ed School	299	28.71	3.89019	.22498			
	Total	544	28.85	4.02982	.17278			

**Table No. 5.13. (B) School Type Wise Multiple Comparison of PI and PSu**

Dependent Variable	(I) Type of Schools	(J) Type of School	Mean Difference (I-J)	Std. Error	Sig.
<b>PI</b>	Girls' School	Boys'	.89626*	.29307	.002
		Co-ed	.36003	.22638	.112
	Boys' School	Girls'	-.89626*	.29307	.002
		Co-ed	-.53623*	.26158	.041
	Co-ed School	Girls'	-.36003	.22638	.112
		Boys'	.53623*	.26158	.041
<b>PSu</b>	Girls' School	Boys'	3.29252*	.50671	.000
		Co-ed	1.62949*	.39140	.000
	Boys' School	Girls'	-3.29252*	.50671	.000

		Co-ed	-1.66303*	.45226	.000
	Co-ed School	Girls'	-1.62949*	.39140	.000
		Boys'	1.66303*	.45226	.000

### Interpretation

The above Table No. 5.13. (A) shows that in the PI score, out of 544 secondary school students, the mean score of 147 secondary school students from girls' schools, 98 from boys' schools, 299 from co-ed schools are 23.82, 22.93, and 23.46 respectively. It means that the secondary school students from the girls' schools have more PI scores than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=4.676$ ,  $df= 2/541$  &  $p= .010$ ) the result is significant. Hence, it indicates significant differences in PI scores among secondary school students concerning their school type. Further, the multiple comparisons [See Table No. 5.13 (B)] on PI scores through LSD test showed that the actual differences lie between girls' school and boys' school ( $p=.002<0.05$ ), and boys' school and co-ed School ( $p=.041<0.05$ ) secondary school students.

The above Table No. 5.13. (A) shows that PSu score, out of 544 secondary school students, the mean score of 147 secondary school students from girls' schools, 98 from boys' schools, 299 from co-ed schools are 30.34, 27.05, and 28.71. It means that the secondary school students from the girls' schools have more PSu scores than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=21.547$ ,  $df= 2/541$ , &  $p=.000$ ) the result is significant. Hence, it indicates significant differences in PSu scores among secondary school students concerning their school type. Further, the multiple comparisons [See Table No. 5.13. (B)] on PSu scores through LSD test showed that the actual differences lie between girls' school and boys' school ( $p=.000<0.05$ ), girls' school and co-ed School ( $p=.000<0.05$ ), and boys' school and co-ed School ( $p=.000<0.05$ ) secondary school students.

### 5.2.4.2. Variations in PI and PSu concerning Class

**Table No. 5.14. Class-wise Mean Comparison of PI and PSu**

	Class	N	Mean	SD	SEM	t	df	p
<b>PI</b>	Nine	288	23.42	2.24	.13257	-.494	542	.621
	Ten	256	23.52	2.28	.14250			
<b>PSu</b>	Nine	288	28.56	4.18	.24682	-1.776	542	.076
	Ten	256	29.17	3.82	.23909			

### Interpretation

Table No. 5.14. Shows that in the case of PI score, out of 544 secondary school students, the mean score of 256 tenth grade students of secondary-level (i.e., 23.52) is greater than the mean score of 288 ninth grade secondary school students (i.e. 23.42). It means that tenth grade students of secondary level have more PI scores than ninth grade students of secondary level. Further, the t-test shows that ( $t = -.494$ ,  $df = 542$ , &  $p = .621$ ) the result is not significant. Hence, it means no significant difference in PI score among secondary school students with regard to their class.

Table No. 5.14. Shows that in the case of PSu score, out of 544 secondary school students, the mean score of 256 tenth grade students of secondary-level (i.e., 29.17) is greater than the mean score of 288 ninth grade secondary school students (i.e.28.56). It means that tenth grade students of secondary level have more PSu scores than ninth grade students of secondary level. Further, the t-test shows that ( $t = -1.776$ ,  $df = 542$ , &  $p = .076$ ) the result is not significant. Hence, it means no significant difference in PSu score among secondary school students with regard to their class.

### 5.2.4.3. Variations in PI and PSu concerning Gender

**Table No. 5.15. Gender-wise Mean Comparison of PI and PSu**

	Gender of the Student	N	Mean	SD	SEM	t	df	p
PI	Male	258	23.22	2.21549	.13793	-2.417	542	<b>.016</b>
	Female	286	23.69	2.28529	.13513			
PSu	Male	258	27.52	4.04034	.25154	-7.703	542	<b>.000</b>
	Female	286	30.05	3.62864	.21457			

### Interpretation

Table No. 5.15. Shows that in the case of PI score, out of 544 secondary school students, the mean score of 286 female students of secondary-level (i.e., 23.69) is greater than the mean score of 258 male students of secondary school students (i.e., 23.22). It means that female students of secondary-level have more PI score than male students. Further, the t-test shows that ( $t = -2.417$ ,  $df = 542$  &  $p = .016 < 0.05$ ) the result is significant. Hence, it means a significant difference in PI score among secondary school students with regard to their gender.

Table No. 5.15. Shows that in the case of PSu score, out of 544 secondary school students, the mean score of 286 female students of secondary-level (i.e., 30.05) is greater

than the mean score of 258 male students of secondary school students (i.e., 27.52). It means that female students of secondary level have more PSu score than male students. Further, the t-test shows that ( $t = -7.703$ ,  $df = 542$  &  $p = .000 < 0.05$ ) the result is significant. Hence, it means a significant difference in PSu score among secondary school students with regard to their gender.

#### 5.2.4.4. Variations in PI and PSu concerning Family Type

**Table No. 5.16. Family type-wise Mean Comparison of PI and PSu**

	Family Type	N	Mean	SD	SEM	t	df	p
<b>PI</b>	Joint Family	185	23.56	1.95192	.14351	.677	542	.498
	Nuclear or Broken Family	359	23.42	2.40817	.12710			
<b>PSu</b>	Joint Family	185	28.60	4.35497	.32018	-1.036	542	.301
	Nuclear or Broken Family	359	28.98	3.85161	.20328			

#### **Interpretation**

Table No. 5.16. Shows that in the case of PI score, out of 544 secondary school students, the mean score of 185 secondary school students from joint family (i.e., 23.56) is greater than the mean score of 359 secondary school students from nuclear or broken family (i.e., 23.42). It means that secondary school students from joint family have more PI score than nuclear or broken Family. Further, the t-test shows that ( $t = .677$ ,  $df = 542$  &  $p = .498 > 0.05$ ) the result is not significant. Hence, it means no significant difference in PI score among secondary school students with regard to their family types.

Table No. 5.16. Shows that in the case of PSu score, out of 544 secondary school students, the mean score of 359 secondary school students from nuclear or broken family (i.e., 28.98) is greater than the mean score of 185 secondary school students from joint family (i.e., 28.60). It means that secondary school students from broken or nuclear family have more PI score than joint Family. Further, the t-test shows that ( $t = -1.036$ ,  $df = 542$  &  $p = .301 > 0.05$ ) the result is not significant. Hence, it means no significant difference in PSu score among secondary school students with regard to their family types.

### 5.2.4.5. Variations in PI and PSu concerning Number of Siblings

**Table No. 5.17. (A) Number of Siblings-wise Mean Comparison of PI and PSu**

	Number of Siblings	N	Mean	SD	SEM	F	df	P
<b>PI</b>	Single Child	122	23.21	2.50618	.22690	3.588	3/540	<b>.014</b>
	Having One Sibling	311	23.40	1.97181	.11181			
	Having Two Siblings	69	24.27	2.89083	.34801			
	Having Three to Six Siblings	42	23.35	2.16199	.33360			
	Total	544	23.47	2.26249	.09700			
<b>PSu</b>	Single Child	122	27.98	4.00488	.36259	2.481	3/540	.060
	Having One Sibling	311	29.07	3.92263	.22243			
	Having Two Siblings	69	29.24	4.13257	.49750			
	Having Three to Six Siblings	42	29.09	4.48879	.69264			
	Total	544	28.85	4.02982	.17278			

**Table No. 5.17. (B) Number of Siblings-wise Multiple Comparison of PI**

Dependent Variable	(I) Number of Siblings	(J) Number of Siblings	Mean Difference (I-J)	Std. Error	Sig.
<b>PI</b>	Single Child	Having One Sibling	-.18954	.23999	.430
		Having Two Siblings	-1.05815*	.33839	.002
		Having Three to Six Siblings	-.13993	.40190	.728
	Having One Sibling	Single Child	.18954	.23999	.430
		Having Two Siblings	-.86861*	.29894	.004

		Having Three to Six Siblings	.04961	.36930	.893
	Having Two Siblings	Single Child	1.05815*	.33839	.002
		Having One Sibling	.86861*	.29894	.004
		Having Three to Six Siblings	.91822*	.43966	.037
	Having Three to Six Siblings	Single Child	.13993	.40190	.728
		Having One Sibling	-.04961	.36930	.893
		Having Two Siblings	-.91822*	.43966	.037

### Interpretation

The above Table No. 5.17. (A) shows that in the PI score, out of 544 secondary school students, the mean score of 122 secondary school students with single child, 311 students having one sibling, 69 students having two siblings and 42 students having three to six siblings are 23.21, 23.40, 24.27, and 23.35. It means that the secondary school students having two siblings have more PI score than the other category of secondary school students. Further, the one-way ANOVA shows that ( $F= 3.588$ ,  $df= 3/540$  &  $p= .014$ ) the result is significant. Hence, it indicates significant differences in PI score among secondary school students concerning their number of siblings. Further, the multiple comparisons [see Table No. 5.17. (B)] on PI score through the LSD test showed that the actual differences lie between single child and having two siblings ( $p=.002<0.05$ ), having one sibling and having two siblings ( $p=.004<0.05$ ), having two siblings and having six siblings ( $p=.037<0.05$ ) secondary school students.

The above Table No. 5.17. (A) shows that in the PSu score, out of 544 secondary school students, the mean score of 122 secondary school students with single child, 311 students having one sibling, 69 students having two siblings and 42 students having three to six siblings are 27.98, 29.07, 29.24, and 29.09. It means that the secondary school students having two siblings have more PSu score than the other category of secondary school students. Further, the one-way ANOVA shows that ( $F= 2.481$ ,  $df= 3/540$  &  $p=.060$ ) the result is insignificant. Hence, it indicates no significant differences in PSu score among secondary school students concerning their number of siblings.

#### 5.2.4.6. Variations in PI and PSu concerning Father's Educational Qualifications

**Table No. 5.18. (A) Father's Educational Qualifications-wise Mean Comparison of PI and PSu**

	<b>Father`s Educational Qualifications</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SEM</b>	<b>F</b>	<b>df</b>	<b>p</b>
<b>PI</b>	Elementary (Up to Class VIII)	139	23.61	2.22740	.18893	2.763	2/541	.064
	Secondary and Higher Secondary (Class-IX to XII)	286	23.57	2.29834	.13590			
	Graduation and Above	119	23.04	2.18098	.19993			
	Total	544	23.47	2.26249	.09700			
<b>PSu</b>	Elementary (Up to Class VIII)	139	29.42	4.03035	.34185	3.499	2/541	<b>.031</b>
	Secondary and Higher Secondary (Class-IX to XII)	286	28.89	4.00592	.23687			
	Graduation and Above	119	28.10	4.00243	.36690			
	Total	544	28.85	4.02982	.17278			

**Table No. 5.18. (B) Father's Educational Qualifications-wise Multiple Comparison of PSu**

<b>Dependent Variable</b>	<b>(I) Father`s Educational Qualifications</b>	<b>(J) Father`s Educational Qualifications</b>	<b>Mean Difference (I-J)</b>	<b>Std. Error</b>	<b>Sig.</b>
<b>PSu</b>	Elementary (Up to Class VIII)	Secondary and Higher Secondary (Class-IX to XII)	.52751	.41476	.204
		Graduation and Above	1.32002*	.50099	.009

	Secondary and Higher Secondary (Class-IX to XII)	Elementary (Up to Class VIII)	-.52751	.41476	.204
		Graduation and Above	.79252	.43759	.071
	Graduation and Above	Elementary (Up to Class VIII)	-1.32002*	.50099	.009
		Secondary and Higher Secondary (Class-IX to XII)	-.79252	.43759	.071

### Interpretation

The above Table No. 5.18. (A) Shows that in the PI score, out of 544 secondary school students, the mean score of 139 Elementary educational qualifications father's, 286 Secondary and Higher Secondary educational qualifications fathers, 119 Graduation and above educational qualifications fathers are 23.61, 23.57, and 23.04. It means that the secondary school students with elementary educational qualifications fathers have more PI score than the other category of secondary school students. Further, the one-way ANOVA shows that ( $F=2.763$ ,  $df= 2/541$  &  $p= .064$ ), the result is not significant. Hence, it indicates no significant differences in PI score among secondary school students concerning their father's educational qualification.

The above Table No. 5.18. (A) Shows that in the PSu score, out of 544 secondary school students, the mean score of 139 Elementary educational qualifications father's, 286 Secondary and Higher Secondary educational qualifications father's, 119 Graduation and Above educational qualifications father's are 29.42, 28.89, and 28.10. It means that the secondary school students with elementary educational qualifications fathers have more PSu score than the other category of secondary school students. Further, the one-way ANOVA shows that ( $F= 3.499$ ,  $df= 2/541$  &  $p= .031$ ), the result is significant. Hence, it indicates significant differences in PSu scores among secondary school students concerning their father's educational qualifications. Further, the multiple comparisons [see Table No. 5.18. (B)] on PSu score through LSD test showed that the actual differences lie between elementary (Up to Class VIII) and Graduation and above ( $p=.009<0.05$ ).

### 5.2.4.7. Variations in PI and PSu concerning Mother's Educational Qualifications

**Table No. 5.19. (A) Mother's Educational Qualifications-wise Mean Comparison of PI and PSu**

	<b>Mother`s Educational Qualifications</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SEM</b>	<b>F</b>	<b>df</b>	<b>p</b>
<b>PI</b>	Elementary (Up to Class VIII)	155	23.74	2.44972	.19677	2.528	2/54 1	.0 8 1
	Secondary and Higher Secondary (Class-IX to XII)	322	23.43	2.16106	.12043			
	Graduation and Above	67	23.01	2.23771	.27338			
	Total	544	23.47	2.26249	.09700			
<b>PSu</b>	Elementary (Up to Class VIII)	155	29.52	4.06735	.32670	4.416	2/54 1	<b>.0 1 3</b>
	Secondary and Higher Secondary (Class-IX to XII)	322	28.74	3.96091	.22073			
	Graduation and Above	67	27.84	4.06874	.49708			
	Total	544	28.85	4.02982	.17278			

**Table No. 5.19. (B) Mother's Educational Qualifications-wise Multiple Comparison of PSu**

<b>Dependent Variable</b>	<b>(I) Mother`s Educational Qualifications</b>	<b>(J) Mother`s Educational Qualifications</b>	<b>Mean Difference (I-J)</b>	<b>Std. Error</b>	<b>Sig.</b>
<b>PSu</b>	Elementary (Up to Class VIII)	Secondary and Higher Secondary (Class-IX to XII)	.77879*	.39150	.047
		Graduation and Above	1.67930*	.58552	.004
	Secondary and Higher	Elementary (Up to Class VIII)	-.77879*	.39150	.047

	Secondary (Class-IX to XII)	Graduation and Above	.90051	.5377 5	.095
	Graduation and Above	Elementary (Up to Class VIII)	-1.67930*	.5855 2	.004
		Secondary and Higher Secondary (Class-IX to XII)	-.90051	.5377 5	.095

### Interpretation

The above Table No. 5.19. (A) shows that in the PI score, out of 544 secondary school students, the mean score of 155 Elementary educational qualifications mothers, 322 Secondary and Higher Secondary educational qualifications mothers, 67 Graduation and Above educational qualifications mothers is 23.74, 23.43, and 23.01. It means that the secondary school students with elementary educational qualifications fathers have more PI score than the other category of secondary school students. Further, the one-way ANOVA shows that ( $F=2.528$ ,  $df= 2/541$  &  $p= .081$ ), the result is not significant. Hence, it indicates no significant differences in PI score among secondary-level students concerning their father's educational qualification.

The above Table No. 5.19. (A) Shows that in the PSu score, out of 544 secondary school students, the mean score of 155 Elementary educational qualifications mother's, 322 Secondary and Higher Secondary educational qualifications mothers, 67 Graduation and above educational qualifications mothers are 29.52, 28.74, and 27.84. It means that the secondary school students with elementary educational qualifications mothers have more PSu score than the other category of secondary school students. Further, the one-way ANOVA shows that ( $F= 4.416$ ,  $df= 2/541$  &  $p= .013$ ), the result is significant. Hence, it indicates significant differences in PSu scores among secondary school students concerning their mother's educational qualifications. Further, the multiple comparisons [see Table No. 5.19 (B)] on PSu score through LSD test showed that the actual differences lie between elementary (Upto Class VIII) and Secondary and Higher Secondary ( $p=.047<0.05$ ), elementary (Upto Class XII) and Graduation and Above ( $p=.004<0.05$ ).

### 5.2.4.8. Variations in PI and PSu concerning Family Monthly Income

**Table No. 5.20. (A) Family Monthly Income–wise Mean Comparison of PI and PSu**

	<b>Family Monthly Income</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SEM</b>	<b>F</b>	<b>df</b>	<b>P</b>
<b>PI</b>	Up to 6,174	179	23.68	2.19211	.16385	2.098	4/ 539	.080
	6,175 - 18,496	180	23.57	2.36860	.17655			
	18,497 - 30,830	76	23.25	2.01245	.23084			
	30,831 - 46,128	40	22.62	2.65241	.41938			
	More than 46,189	69	23.37	2.09763	.25252			
	Total	544	23.47	2.26249	.09700			
<b>PSu</b>	Up to 6,174	179	29.48	4.05368	.30299	2.971	4/ 539	.019
	6,175 - 18,496	180	29.01	3.71765	.27710			
	18,497 - 30,830	76	28.30	4.13035	.47378			
	30,831 - 46,128	40	27.88	3.90018	.61667			
	More than 46,189	69	27.96	4.46582	.53762			
	Total	544	28.85	4.02982	.17278			

**Table No. 5.20. (B) Family Monthly Income-wise Multiple Comparison of PI and PSu**

<b>Dependent Variable</b>	<b>(I) Family Monthly Income</b>	<b>(J) Family Monthly Income</b>	<b>Mean Difference (I- J)</b>	<b>Std. Error</b>	<b>Sig.</b>
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<b>PSu</b>	Up to 6,174	6,175 - 18,496	.46657	.42232	.270
		18,497 - 30,830	1.17403*	.54776	.033
		30,831 - 46,128	1.59574*	.69971	.023
		More than 46,189	1.51947*	.56693	.008
	6,175 - 18,496	Up to 6,174	-.46657	.42232	.270
		18,497 - 30,830	.70746	.54731	.197
		30,831 - 46,128	1.12917	.69936	.107
		More than 46,189	1.05290	.56649	.064
	18,497 - 30,830	Up to 6,174	-1.17403*	.54776	.033
		6,175 - 18,496	-.70746	.54731	.197
		30,831 - 46,128	.42171	.78153	.590
		More than 46,189	.34544	.66529	.604
	30,831 - 46,128	Up to 6,174	-1.59574*	.69971	.023
		6,175 - 18,496	-1.12917	.69936	.107
		18,497 - 30,830	-.42171	.78153	.590
		More than 46,189	-.07627	.79509	.924
	More than 46,189	Up to 6,174	-1.51947*	.56693	.008
		6,175 - 18,496	-1.05290	.56649	.064
		18,497 - 30,830	-.34544	.66529	.604
		30,831 - 46,128	.07627	.79509	.924

### Interpretation

The above Table No. 5.20. (A) shows that in the PI score, out of 544 secondary school students, the mean score of 179 secondary school students with 6,174 – Low family monthly income, 180 students with 6,175 - 18,496 family monthly income, 76 students with 18,497 - 30,830 family monthly income, 40 students with 30,831 - 46,128 family monthly income, and 69 students with More than 46,189 family monthly income are

23.68, 23.57, 23.25, 22.62, and 23.37. It means that the secondary school students with 6,174 – Low family monthly income has more PI score than the other category of secondary school students. Further, the one-way ANOVA shows that ( $F= 2.098$ ,  $df= 4/539$  &  $p=.080$ ) the result is not significant. Hence, it indicates no significant differences in PI score among secondary school students concerning their family monthly income.

The above Table No. 5.20. (A) shows that in the PSu score, out of 544 secondary school students, the mean score of 179 secondary school students with 6,174 – Low family monthly income, 180 students with 6,175 - 18,496 family monthly income, 76 students with 18,497 - 30,830 family monthly income, 40 students with 30,831 - 46,128 family monthly income, and 69 students with More than 46,189 family monthly income are 29.48, 29.01, 28.30, 27.88, and 27.96. It means that the secondary school students with 6,174 – Low family monthly income have more PSu score than the other category of secondary school students. Further, the one-way ANOVA shows that ( $F= 2.971$ ,  $df= 4/539$  &  $p=.019$ ) the result is significant. Hence, it indicates significant differences in PSu score among secondary school students concerning their family monthly income. Further, the multiple comparisons [see Table No. 5.20.(B).] on PSu score through LSD test showed that the actual differences lie between Up to 6,174 and 18,497 - 30,830 ( $p=.033<0.05$ ), Up to 6,174 and 30,831 - 46,128 ( $p=.023<0.05$ ), Up to 6,174 and more than 46,189 ( $p=.008<0.05$ ) family income of secondary school students.

### 5.2.5. Influence of Demographics on PSs among the Secondary School Students in WB

**H<sub>03</sub>:** *Demographics (school type, class, gender, family type, number of siblings, parental educational qualification, and family monthly income) do not significantly influence the PSs among the secondary school students in WB.*

#### 5.2.5.1. Influence of School Type on PSs

**Table No. 5.21. School Type-wise Comparison of PSs**

School Type * PSs Cross tabulation					
	PSs				Total
	Authoritative Parenting	Authoritarian Parenting	Indulgent Parenting	Neglectful Parenting	

<b>School Type</b>	Girls' School	Count	66	41	20	20	147
		Expected Count	41.1	32.2	30.5	43.2	147.0
		% within Type of School	44.9%	27.9%	13.6%	13.6%	100.0%
		% of Total	12.1%	7.5%	3.7%	3.7%	27.0%
		Count	12	15	28	43	98
	Boys' School	Expected Count	27.4	21.4	20.4	28.8	98.0
		% within Type of School	12.2%	15.3%	28.6%	43.9%	100.0%
		% of Total	2.2%	2.8%	5.1%	7.9%	18.0%
		Count	74	63	65	97	299
	Co-ed School	Expected Count	83.5	65.4	62.1	87.9	299.0
		% within Type of School	24.7%	21.1%	21.7%	32.4%	100.0%
		% of Total	13.6%	11.6%	11.9%	17.8%	55.0%
		Count	152	119	113	160	544
Total	Expected Count	152.0	119.0	113.0	160.0	544.0	
	% within Type of School	27.9%	21.9%	20.8%	29.4%	100.0%	
	% of Total	27.9%	21.9%	20.8%	29.4%	100.0%	
	<b>Chi-Square Tests</b>						
			Value	df	Asymp. Sig. (2-sided)		

Pearson Chi-Square	56.345 <sup>a</sup>	6	<b>.000</b>
N of Valid Cases	544		
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 20.36.			

### **Interpretation**

Table No. 5.21. represents the distribution of PSs for secondary school students concerning their school types. It shows that out of 544 students, 147 (27.0%) students are from girls' school, 98 (18.0%) students are from boys' school, and 299 (55.0%) students are from co-ed school.

In the girls' school, the following PSs were expressed: 44.9% authoritative parenting, 27.9% authoritarian parenting, 13.6% indulgent parenting, and 13.6% neglectful parenting. This indicates that authoritative parenting was most perceived by girl's school students. Within the boys' school, the following PSs were expressed: 12.2% authoritative parenting, 15.3% authoritarian parenting, 28.6% indulgent parenting, and 43.9% neglectful parenting. This indicates that neglectful parenting was most apprehended by boys' school students. Within the co-ed school, the following parenting styles were expressed: 24.7% authoritative parenting, 21.1% authoritarian parenting, 21.7% indulgent parenting, and 32.4% neglectful parenting. This indicates that neglectful parenting was most faced by co-ed Secondary school students.

Among all the groups, the highest number of girls' school students (44.9%) perceived authoritative parenting and the lowest number was for boys' school students (12.2%). The maximum number of girls' school students (27.9%) perceived authoritarian parenting and the lowest faced by boys' school students (15.3%). The highest number of boys' school students (28.6%) apprehended indulgent parenting and (13.6%) the lowest number of girls' school students faced indulgent parenting style. The highest number of boys' school students (43.9%) apprehended neglectful parenting and the lowest number of girls' school students (13.6%) perceived neglectful parenting.

Regarding all the 544 students, the maximum number of students perceived (29.4%) neglectful parenting, followed by authoritative parenting (27.9%), authoritarian parenting (21.9%), and indulgent parenting (20.8%).

Further, the Chi-square results revealed that these overall variations in PSs are significant ( $X^2 = 56.345^a$ ,  $df = 8$ ,  $p = .000$ ).

### 5.2.5.2. Influence of Class on PSs

**Table No. 5.22. Class-wise Comparison of PSs**

<b>Class * PSs Cross tabulation</b>							
			PSs				Total
			Authoritati ve Parenting	Authoritari an Parenting	Indulgent Parenting	Neglectful Parenting	
<b>Class</b>	Nine	Count	77	57	66	88	288
		Expected Count	80.5	63.0	59.8	84.7	288.0
		% within Class	26.7%	19.8%	22.9%	30.6%	100.0%
		% of Total	14.2%	10.5%	12.1%	16.2%	52.9%
	Ten	Count	75	62	47	72	256
		Expected Count	71.5	56.0	53.2	75.3	256.0
		% within Class	29.3%	24.2%	18.4%	28.1%	100.0%
		% of Total	13.8%	11.4%	8.6%	13.2%	47.1%
<b>Total</b>	Count	152	119	113	160	544	
	Expected Count	152.0	119.0	113.0	160.0	544.0	
	% within Class	27.9%	21.9%	20.8%	29.4%	100.0%	
	% of Total	27.9%	21.9%	20.8%	29.4%	100.0%	
<b>Chi-Square Tests</b>							
			Value	df	Asymp. Sig. (2-sided)		
Pearson Chi-Square			3.160 <sup>a</sup>	3	.368		
N of Valid Cases			544				
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 53.18.							

## Interpretation

Table No. 5. 22. represents the distribution of PSs for secondary school students concerning their class. It shows that out of 544 students, 288 (52.9%) students are studying in class nine, and 256 (47.1%) students are studying in class ten.

In class nine, the following PSs were perceived 26.7% Authoritative Parenting Style, 19.8% Authoritarian Parenting, 22.9% Indulgent Parenting, and 30.6% Neglectful Parenting. This indicates that neglectful parenting was most perceived by class nine students. Within the class ten, the following parenting style was found: 29.3% Authoritative Parenting, 24.2% Authoritarian Parenting, 18.4% Indulgent Parenting and 28.1% Neglectful Parenting. This indicates that authoritative parenting was most apprehended by class ten students.

Among all the groups, the highest number of class ten students (29.3%) perceived authoritative parenting and the lowest number were for class nine students (26.7%). The maximum number of class ten students (24.2%) apprehended authoritarian parenting and the lowest number was for class nine students (19.8%). The highest number of class nine students (22.9%) perceived an indulgent parenting and the lowest number was for class ten students (18.4%). The highest number of class nine students (30.6%) faced neglectful parenting and the lowest number was for class ten students (28.1%).

Regarding all the 544 students, maximum number of students perceived neglectful parenting (29.4%), followed by authoritative parenting (27.9%), authoritarian parenting (21.9%), indulgent parenting (20.8%).

However, the Chi-square results revealed that these overall variations in PSs are not significant ( $X^2=3.160a$ ,  $df= 8$ ,  $p=.368$ ).

### 5.2.5.3. Influence of Gender on PSs

**Table No. 5.23. Gender-wise Comparison of PSs**

Gender * PSs Cross tabulation							
			PSs				Total
			Authoritative Parenting	Authoritarian Parenting	Indulgent Parenting	Neglectful Parenting	
Gender	Male	Count	45	39	63	111	258
		Expected Count	72.1	56.4	53.6	75.9	258.0

		% within Gender of the Student	17.4%	15.1%	24.4%	43.0%	100.0%
		% of Total	8.3%	7.2%	11.6%	20.4%	47.4%
	Female	Count	107	80	50	49	286
		Expected Count	79.9	62.6	59.4	84.1	286.0
		% within Gender of the Student	37.4%	28.0%	17.5%	17.1%	100.0%
		% of Total	19.7%	14.7%	9.2%	9.0%	52.6%
	Total	Count	152	119	113	160	544
		Expected Count	152.0	119.0	113.0	160.0	544.0
		% within Gender of the Student	27.9%	21.9%	20.8%	29.4%	100.0%
		% of Total	27.9%	21.9%	20.8%	29.4%	100.0%
<b>Chi-Square Tests</b>							
			Value	df	Asymp. Sig. (2-sided)		
Pearson Chi-Square			63.664 <sup>a</sup>	3	<b>.000</b>		
N of Valid Cases			544				
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 53.59.							

## Interpretation

Table No. 5.23. represents the distribution of PSs for secondary level students concerning their gender. It shows that out of 544 students, 258 (47.4%) students are male and 286 (52.6%) students are female.

Among male students, the following parenting styles were expressed: 17.4% authoritative parenting, 15.1% authoritarian parenting, 24.4% indulgent parenting, and 43.0% neglectful parenting. This indicates that neglectful parenting was most perceived by male secondary school students. For the female class students, the following PSs were expressed: 37.4% authoritative parenting, 28.0% authoritarian parenting, 17.5% indulgent parenting, and 17.1% neglectful parenting. This indicates that authoritative parenting was most apprehended by female secondary school students.

Among all the groups, the highest number of female secondary school students (37.4%) perceived authoritative parenting and the lowest number was for male secondary school students (17.4%). The maximum number of female secondary school students (28.0%) apprehended authoritarian parenting and lowest faced by male secondary school students (15.1%). The highest number of male secondary school students (24.4%) perceived indulgent parenting and (17.5%) the lowest number of female secondary school students apprehended indulgent parenting. The highest number of male secondary school students (43.0%) perceived neglectful parenting and the lowest number of female secondary school students (17.1%) were apprehended neglectful parenting.

Regarding all the 544 students, maximum number of students perceived neglectful parenting (29.4%), followed by authoritative parenting (27.9%), authoritarian parenting (21.9%), indulgent parenting (20.8%).

Further, the Chi-square results revealed that these overall variations in PSs are significant ( $X^2=63.664a$ ,  $df= 8$ ,  $p=.000$ ).

### 5.2.5.4. Influence of Family Type on PSs

**Table No. 5.24. Family type-wise Comparison of PSs**

Family Type * PSs Cross tabulation							
			PSs				Total
			Authoritative Parenting	Authoritarian Parenting	Indulgent Parenting	Neglectful Parenting	
Family	Joint	Count	51	34	46	54	185

<b>Type</b>	Family	Expected Count	51.7	40.5	38.4	54.4	185.0
		% within Family Type	27.6%	18.4%	24.9%	29.2%	100.0%
		% of Total	9.4%	6.3%	8.5%	9.9%	34.0%
	Nuclear or Broken Family	Count	101	85	67	106	359
		Expected Count	100.3	78.5	74.6	105.6	359.0
		% within Family Type	28.1%	23.7%	18.7%	29.5%	100.0%
		% of Total	18.6%	15.6%	12.3%	19.5%	66.0%
	Total	Count	152	119	113	160	544
		Expected Count	152.0	119.0	113.0	160.0	544.0
% within Family Type		27.9%	21.9%	20.8%	29.4%	100.0%	
% of Total		27.9%	21.9%	20.8%	29.4%	100.0%	
<b>Chi-Square Tests</b>							
			Value	df	Asymp. Sig. (2-sided)		
Pearson Chi-Square			3.846 <sup>a</sup>	3	.279		
N of Valid Cases			544				
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 38.43.							

## Interpretation

Table No. 5.24. represents the distribution of PSs of secondary school students concerning their family type. It shows that out of 544 secondary school students, 185 (34.0%) secondary level students belonged to Joint Family, 359 (66.0%) secondary school students belonged to Nuclear or Broken Family.

Among joint family secondary school students, the following PSs were expressed: 27.6% authoritative parenting, 18.4% authoritarian parenting, 24.9% indulgent parenting, 29.2% neglectful parenting. This indicates that neglectful parenting was most perceived by joint family secondary school students. Among nuclear or broken family secondary school students, the following PSs were expressed: 28.1% authoritative parenting, 23.7% authoritarian parenting, 18.7% indulgent parenting, and 29.5% neglectful parenting. This indicates that neglectful parenting was most apprehended by broken or nuclear family secondary school students.

Among all the groups, the highest number of secondary school students belonged to nuclear or broken family (28.1%) perceived authoritative parenting and the lowest number was for secondary school students belonged to joint family (27.6%). The maximum number of secondary school students belonged to nuclear or broken family (23.7%) apprehended authoritarian parenting and lowest was faced by secondary school students belonged to joint family (18.4%). The highest number of secondary school students' belonged to joint family (24.9%) perceived indulgent parenting and lowest number (18.7%) was for secondary school students belonged to nuclear or broken family. The highest number of secondary school students' belonged to nuclear or broken family (29.5%) perceived neglectful parenting and the lowest number was for secondary school students belonged to joint family (29.2%).

Concerning all the 544 students, maximum number of students perceived neglectful parenting style (29.4%), followed by authoritative parenting style (27.9%), authoritarian parenting (21.9%), and indulgent parenting style (20.8%).

However, the Pearson's Chi-square results confirmed that these overall variations in PSs are not significantly influenced by family type ( $X^2=3.846^a$ ,  $df= 3$ ,  $p=.279$ ).

### 5.2.5.5. Influence of Number of Siblings on PSs

**Table No. 5.25. Number of Siblings-wise Comparison on PSs**

Number of Siblings * PSs Cross tabulation							
			PSs				Total
			Authoritative Parenting	Authoritarian Parenting	Indulgent Parenting	Neglectful Parenting	
Number of Siblings	Single Child	Count	28	19	35	40	122
		% within Number of Siblings	23.0%	15.6%	28.7%	32.8%	100.0%
		% of Total	5.1%	3.5%	6.4%	7.4%	22.4%
	Having One Sibling	Count	84	77	55	95	311
		% within Number of Siblings	27.0%	24.8%	17.7%	30.5%	100.0%
		% of Total	15.4%	14.2%	10.1%	17.5%	57.2%
	Having Two Siblings	Count	26	14	16	13	69
		% within Number of Siblings	37.7%	20.3%	23.2%	18.8%	100.0%

		% of Total	4.8%	2.6%	2.9%	2.4%	12.7%
	Having Three to Six Siblings	Count	14	9	7	12	42
		% within Number of Siblings	33.3%	21.4%	16.7%	28.6%	100.0%
		% of Total	2.6%	1.7%	1.3%	2.2%	7.7%
Total		Count	152	119	113	160	544
		% within Number of Siblings	27.9%	21.9%	20.8%	29.4%	100.0%
		% of Total	27.9%	21.9%	20.8%	29.4%	100.0%
<b>Chi-Square Tests</b>							
				Value	df	Asymp. Sig. (2-sided)	
Pearson Chi-Square				16.327 <sup>a</sup>	9	.060	
N of Valid Cases				544			
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.72.							

### Interpretation

Table No. 5.25. represents the distribution of PSs of secondary school students concerning their number of siblings. It shows that out of 544 secondary school students, 122 (22.4%) secondary school students with single child, 311 (57.2%) secondary school students Having One Sibling, 69 (12.7%) secondary school students Having Two Siblings, and 42 (7.7%) secondary school students Having Three to Six Siblings.

Among single child secondary school students, the following PSs were expressed: 23.0% authoritative parenting, 15.6% authoritarian parenting, 28.7% indulgent parenting, and

32.8% neglectful parenting. This indicates that neglectful parenting was most perceived by single child secondary school students. Among having one sibling secondary school students, the following parenting styles were expressed: 27.0% authoritative parenting, 24.8% authoritarian parenting, 17.7% indulgent parenting, and 30.5% neglectful parenting. This indicates that neglectful parenting was most perceived by having one sibling secondary school students. Among having two siblings secondary school students, the following parenting styles were expressed: 37.7% authoritative parenting, 20.3% authoritarian parenting, 23.2% indulgent parenting, and 18.8% neglectful parenting. This indicates that authoritative parenting was most perceived by having two siblings' secondary school students. Among having three to six siblings' secondary school students, the following parenting styles were expressed: 33.3% authoritative parenting, 21.4% authoritarian parenting, 16.7% indulgent parenting, and 28.6% neglectful parenting. This indicates that authoritative parenting was most perceived by having three or six siblings' secondary school students.

Among all the groups, the highest number of secondary school students having two siblings (37.7%) perceived authoritative parenting and the lowest number were for secondary school students with single child (23.0%). The maximum number of secondary school students having one sibling (24.8%) apprehended authoritarian parenting style and lowest faced by secondary school students with single child (15.6%). The highest number of secondary school students with single child (28.7%) perceived indulgent parenting style and (17.5%) the lowest number (16.7%) of secondary school students having three to six siblings apprehended indulgent parenting. The highest number of secondary school students with single child (32.8%) perceived neglectful parenting and the lowest number were for secondary school students having two siblings (18.8%).

Concerning all the 544 students, maximum number of students apprehended neglectful parenting style (29.4%), followed by authoritative parenting style (27.9%), authoritarian parenting (21.9%), and indulgent parenting style (20.8%).

However, the Pearson's Chi-square results confirmed that these overall variations in PSs are not significantly influenced by number of siblings ( $X^2=16.327^a$ ,  $df= 9$ ,  $p=.060$ ).

### 5.2.5.6. Influence of Father's Educational Qualifications on PSs

**Table No. 5.26. Father's Educational Qualifications-wise Comparison of PSs**

<b>Father's Educational Qualification * PSs Cross tabulation</b>							
			Parenting Styles				Total
			Authoritative Parenting	Authoritarian Parenting	Indulgent Parenting	Neglectful Parenting	
<b>Father's Educational Qualification</b>	Elementary (Up to Class VIII)	Count	46	35	25	33	139
		% within Father's Educational Qualification	33.1%	25.2%	18.0%	23.7%	100.0%
		% of Total	8.5%	6.4%	4.6%	6.1%	25.6%
		Count	87	56	60	83	286
	Secondary and Higher Secondary (Class-IX to XII)	% within Father's Educational Qualification	30.4%	19.6%	21.0%	29.0%	100.0%
		% of Total	16.0%	10.3%	11.0%	15.3%	52.6%
		Count	19	28	28	44	119
	Graduation and Above	% within Father's Educational Qualification	16.0%	23.5%	23.5%	37.0%	100.0%
		% of Total	3.5%	5.1%	5.1%	8.1%	21.9%

Total	Count	152	119	113	160	544
	% within Father's Educationa l Qualificati on	27.9%	21.9%	20.8%	29.4 %	100.0 %
	% of Total	27.9%	21.9%	20.8%	29.4 %	100.0 %
<b>Chi-Square Tests</b>						
		Value		df		Asymp. Sig. (2- sided)
	Pearson Chi-Square	14.398 <sup>a</sup>		6		<b>.025</b>
	N of Valid Cases	544				
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 24.72.						

### Interpretation

Table No. 5.26. represents distribution of parenting styles concerning fathers' educational qualification of secondary school students. It shows that out of 544 students, 139 (25.6%) students mentioned that their father's educational qualification is elementary (Up to Class VIII) and 286 (52.6%) students stated that their father's educational qualification is Secondary and Higher Secondary (Class-IX to XII) and 119 (21.9%) students mentioned that their father's educational qualification is graduation and above.

Among 544 secondary school students, 139 students with elementary educational qualification fathers expressed following parenting style: 33.1% are authoritative parenting, 25.2% authoritarian parenting, 18.0% indulgent parenting, and 23.7% neglectful parenting. This indicates that authoritative parenting was mostly perceived by students with elementary educational qualification fathers. Similarly, out of 544 secondary school students, 286 students with secondary and higher secondary (class-IX to XII) qualified fathers expressed following PSs 30.4% are authoritative parenting, 19.6% authoritarian parenting, 21.0% indulgent parenting, and 29.0% neglectful parenting. This indicates that authoritative parenting was mostly was apprehended by students with secondary and higher secondary educational qualification fathers. 119 students with graduation and above qualified fathers expressed following PSs: 16.0% are

authoritative parenting, 23.5% authoritarian parenting, 23.5% indulgent parenting, and 37.0% neglectful parenting. This indicates that neglectful parenting was mostly perceived by students with graduation and above qualified fathers.

Among all the groups, highest number of student's with elementary educational qualification fathers (33.1%) perceived authoritative parenting and the lowest number was for students with graduation and above qualified fathers (16.0%). The maximum number of students with elementary educational qualification fathers (25.2%) apprehended authoritarian parenting and lowest for (19.6%) students with secondary and higher secondary qualified fathers. Highest number of students with graduation and above qualified fathers (23.5%) perceived indulgent parenting and the lowest number was for students with elementary educational qualifications fathers (18.0%). Similarly for neglectful parenting, maximum students with graduation and above qualified fathers (37.0%) perceived this parenting and lowest for students with elementary educational qualification fathers (23.7%).

In the context of the father's educational level, maximum number of students perceived (29.4%) neglectful parenting, followed by authoritative parenting (27.9%), authoritarian parenting (21.9%), indulgent parenting (20.8%).

Further, Pearson's Chi-Square results confirmed that these overall variations in PSs of secondary level students are significantly influenced by fathers educational qualification ( $X^2=14.398^a$ ,  $df =6$ ,  $p=.025$ ).

#### 5.2.5.7. Influence of Mother's Educational Qualifications on PSs

**Table No. 5.27. Mother's Educational Qualifications-wise Comparison of PSs**

Mother's Educational Qualification * PSs Cross tabulation							
			PSs				Total
			Authoritative Parenting	Authoritarian Parenting	Indulgent Parenting	Neglectful Parenting	
Mother'	Elementar	Count	50	40	31	34	155

<b>s</b> <b>Educational</b> <b>Qualification</b>	y (Upto Class VIII)	% within Mother's Educational Qualification	32.3%	25.8%	20.0%	21.9%	100.0%
		% of Total	9.2%	7.4%	5.7%	6.3%	28.5%
	Secondary and Higher Secondary (Class-IX to XII)	Count	92	66	65	99	322
		% within Mother's Educational Qualification	28.6%	20.5%	20.2%	30.7%	100.0%
		% of Total	16.9%	12.1%	11.9%	18.2%	59.2%
	Graduation and Above	Count	10	13	17	27	67
		% within Mother's Educational Qualification	14.9%	19.4%	25.4%	40.3%	100.0%
		% of Total	1.8%	2.4%	3.1%	5.0%	12.3%
	Total	Count	152	119	113	160	544
		% within Mother's Educational Qualification	27.9%	21.9%	20.8%	29.4%	100.0%

	% of Total	27.9%	21.9%	20.8%	29.4%	100.0 %
<b>Chi-Square Tests</b>						
		Value		df	Asymp. Sig. (2-sided)	
Pearson Chi-Square		13.325 <sup>a</sup>		6	.038	
N of Valid Cases		544				
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 13.92.						

### **Interpretation**

Table No. 5.27. represents distribution of PSs concerning mothers' educational qualifications of secondary school students. It shows that out of 544 students, 155 (28.5%) students mentioned that their father's educational qualifications is elementary (Up to Class VIII) and 322 (59.2%) students stated that their mother's educational qualification is Secondary and Higher Secondary (Class-IX to XII) and 67 (12.3%) students mentioned that their mother's educational qualification is graduation and above. Out Of the total 544 students, 155 students with elementary educational qualification mothers expressed following PSs: 32.2% are authoritative parenting, 25.8% authoritarian parenting, 20.0% indulgent parenting, and 21.9% neglectful parenting. This indicates that authoritative parenting was mostly perceived by students with elementary educational qualification mothers.

Similarly, a total of 322 students with secondary and higher secondary (class-IX to XII) qualified fathers expressed following PSs 28.6% are authoritative parenting, 20.5% authoritarian parenting, 20.2% indulgent parenting, and 30.7% neglectful parenting. This stated that neglectful parenting was mostly apprehended by students with secondary and higher secondary educational qualification mothers.

A total 67 students with graduation and above qualified mothers expressed following PSs 14.9% authoritative, 19.4% authoritarian 25.4% indulgent and 40.3% neglectful. Which indicated that neglectful parenting was mostly perceived by students with graduation and above qualified mothers.

Among all the groups, highest number of students with elementary educations qualified mothers (32.2%) apprehended authoritative parenting and the lowest number was for students with graduation and above qualified mothers (14.9%). The maximum number of students with elementary education qualified mothers (25.8%) perceived authoritarian parenting and lowest was for (19.4%) students with graduation and above qualified mothers. The maximum number of students with graduation and above qualified mothers

(25.4%) apprehended indulgent parenting and the lowest was for students with elementary educations qualified mothers (20.0%). Similarly for neglectful parenting, most of students with graduation and above qualified mothers (40.3%) perceived this type of parenting and lowest was for students with elementary education qualified mothers (21.9%).

In the context of the mother's educational level, maximum number of students responded (29.4%) neglectful parenting, followed by authoritative parenting (27.9%), authoritarian parenting (21.9%), indulgent parenting (20.8%).

Further, Pearson's Chi-Square results confirmed that these overall variations in PSs of secondary school students are significantly influenced by mothers' educational qualification ( $X^2=13.325^a$ ,  $df= 6$ ,  $p=.038$ ).

#### 5.2.5.8. Influence of family monthly income of PSs

**Table No. 5.28. Family Monthly Income-wise Comparison of PSs**

Family Monthly Income * PSs Cross tabulation							
			PSs				Total
			Authoritative Parenting	Authoritarian Parenting	Indulgent Parenting	Neglectful Parenting	
<b>Family Monthly Income</b>	Up to 6,174	Count	62	41	31	45	179
		Expected Count	50.0	39.2	37.2	52.6	179.0
		% within Family Monthly Income	34.6%	22.9%	17.3%	25.1%	100.0%
		% of Total	11.4%	7.5%	5.7%	8.3%	32.9%
	6,175 - 18,496	Count	59	34	37	50	180
		Expected Count	50.3	39.4	37.4	52.9	180.0
		% within Family Monthly Income	32.8%	18.9%	20.6%	27.8%	100.0%

		% of Total	10.8%	6.3%	6.8%	9.2%	33.1%	
	18,497 - 30,830	Count	14	16	19	27	76	
		Expected Count	21.2	16.6	15.8	22.4	76.0	
		% within Family Monthly Income	18.4%	21.1%	25.0%	35.5%	100.0%	
		% of Total	2.6%	2.9%	3.5%	5.0%	14.0%	
		Count	7	9	6	18	40	
	30,831 - 46,128	Expected Count	11.2	8.8	8.3	11.8	40.0	
		% within Family Monthly Income	17.5%	22.5%	15.0%	45.0%	100.0%	
		% of Total	1.3%	1.7%	1.1%	3.3%	7.4%	
		Count	10	19	20	20	69	
		Expected Count	19.3	15.1	14.3	20.3	69.0	
	More than 46,189	% within Family Monthly Income	14.5%	27.5%	29.0%	29.0%	100.0%	
		% of Total	1.8%	3.5%	3.7%	3.7%	12.7%	
		Count	152	119	113	160	544	
		Expected Count	152.0	119.0	113.0	160.0	544.0	
		% within Family Monthly Income	27.9%	21.9%	20.8%	29.4%	100.0%	
	Total	% of Total	27.9%	21.9%	20.8%	29.4%	100.0%	
<b>Chi-Square Tests</b>								

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24.851 <sup>a</sup>	12	<b>.016</b>
N of Valid Cases	544		
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.31.			

### Interpretation

Table No. 5.28. represents the distribution of PSs of secondary school students concerning their family monthly income (reported by the students). It shows that out of 544 secondary level students, 179 (32.9%) secondary school students responded their family monthly income was Up to 6,174, 180 (33.1%) secondary school students responded their family monthly income was between 6,175 - 18,496, 76 (14.0%) secondary school students mentioned their family monthly income was between 18,497 - 30,830, 40 (7.4%) secondary level students confirmed their family monthly income was between 30,831 - 46,128, and 69 (12.7%) secondary school students mentioned their family monthly income was More than 46,189.

Among 179 secondary school students with their family monthly income Up to 6,174 expressed following parenting styles: 34.6% authoritative parenting, 22.9% authoritarian parenting, 17.3% indulgent parenting, 25.1% neglectful parenting. This indicates that authoritative parenting was most perceived by the students with their family monthly income Up to 6,174. Among 180 secondary school students with their family monthly income between 6,175 - 18,496 expressed following parenting styles: 32.8% authoritative parenting, 18.9% authoritarian parenting, 20.6% indulgent parenting, and 27.8% neglectful parenting. This suggests that authoritative parenting was most apprehended by students with their family monthly income between 6,175 - 18,496. 76 secondary school students with their family monthly income between 18,497 - 30,830 expressed following parenting styles: 18.4% authoritative parenting, 21.1% authoritarian parenting, 25.0% indulgent parenting, 35.5% neglectful parenting. This indicates that neglectful parenting was most perceived by students with their family monthly income between 18,497-30,830. 40 secondary school students with their family monthly income between 30,831 - 46,128 expressed following parenting styles: 17.5% authoritative parenting, 22.5% authoritarian parenting, 15.0% indulgent parenting, 45.0% neglectful parenting. This suggest that neglectful parenting was most perceived by students with their family monthly income between 30,831 - 46,128. 69 secondary school students with their family monthly income between More than 46,189 expressed following parenting styles: 14.5%

authoritative parenting, 27.5% authoritarian parenting, 29.0% indulgent parenting, 29.0% neglectful parenting. This indicates that indulgent parenting and neglectful parenting were most perceived by students with their family monthly income between More than 46,189.

Among all the groups, highest number (34.6%) of secondary school students with up to 6,174 family monthly income group perceived authoritative parenting and the lowest number was for students with more than 46,189 family monthly income groups (14.5%). In the case of authoritarian parenting, secondary school students with family monthly income more than 46,189, mostly (27.5%) faced this type of parenting; the lowest (18.9%) was for secondary school students with family monthly income between 6,175-18,496. For indulgent parenting, secondary school students with family monthly income more than 46,189 mostly (29.0%) apprehended this type of parenting, lowest (15.0%) was for secondary school students with family monthly income between 30,831- 46,128. Similarly, maximum numbers (45%) of secondary school students with family monthly income between 30,831- 46,128 perceived neglectful parenting; lowest (25.1%) was for secondary school students with family monthly income Up to 6,174.

Concerning all the 544 students, maximum number of students perceived neglectful parenting (29.4%), followed by authoritative parenting (27.9%), authoritarian parenting (21.9%), and indulgent parenting (20.8%).

Further, the Pearson's Chi-square results confirmed that these overall variations in parenting style are significantly influenced by monthly family income ( $X^2=24.851^a$ ,  $df=12$ ,  $p=.016$ ).

#### **5.2.6. Variations in Creativity and its dimensions among the secondary school students in WB concerning the demographics**

*H<sub>04</sub>: Overall and dimension-wise creativity (fluency, flexibility and originality) do not vary significantly among the secondary school students in WB concerning the demographics (School type, class, gender, family type, number of siblings, parental educational qualification and family income).*

### 5.2.6.1. Variations in Creativity and Its Dimensions concerning School Type

Table No. 5.29. (A) School Type-wise Mean Comparison of Creativity and its Dimensions

	School Type	N	Mean	SD	SEM	F	df	p
<b>Creativity</b>	Girls' School	147	128.59	46.815	3.861	.936	2/541	.393
	Boys' School	98	135.84	42.097	4.252			
	Co-ed School	299	129.36	44.024	2.546			
	Total	544	130.32	44.456	1.906			
<b>Fluency</b>	Girls' School	147	62.18	24.743	2.041	.974	2/541	.378
	Boys' School	98	64.88	24.046	2.429			
	Co-ed School	299	60.93	24.279	1.404			
	Total	544	61.98	24.363	1.045			
<b>Flexibility</b>	Girls' School	147	16.99	7.265	.599	6.339	2/541	<b>.002</b>
	Boys' School	98	14.66	4.262	.431			
	Co-ed School	299	15.17	5.359	.310			
	Total	544	15.57	5.829	.250			
<b>Originality</b>	Girls' School	147	35.61	17.494	1.443	7.953	2/541	<b>.000</b>
	Boys' School	98	42.50	15.854	1.601			
	Co-ed School	299	41.87	16.599	.960			
	Total	544	40.29	16.928	.726			

Table No. 5.29. (B) School Type-wise Multiple Comparisons of Flexibility and Originality

Dependent Variable	(I) Type of School	(J) Type of School	Mean Difference (I-J)	Std. Error	Sig.
<b>Flexibility</b>	Girls' School	Boys' School	2.323*	.753	.002
		Co-ed School	1.812*	.581	.002
	Boys' School	Girls' School	-2.323*	.753	.002
		Co-ed School	-.511	.672	.448
	Co-ed School	Girls' School	-1.812*	.581	.002
		Boys' School	.511	.672	.448
<b>Originality</b>	Girls' School	Boys' School	-6.888*	2.180	.002

		Co-ed School	-6.261*	1.684	.000
	Boys' School	Girls' School	6.888*	2.180	.002
		Co-ed School	.627	1.946	.747
	Co-ed School	Girls' School	6.261*	1.684	.000
		Boys' School	-.627	1.946	.747

### Interpretation

The above Table No. 5.29.(A) reflects that in the test of creativity, out of 544 secondary school students, the mean score of 147 secondary school students from girls' schools, 98 from boys' schools, 299 from co-ed schools are 128.59, 135.84, and 129.36 respectively. It means that the secondary school students from the boys' schools have more creativity score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=.936$ ,  $df= 2/541$  &  $p= .393$ ) the result is not significant. Hence, it indicates no significant differences in creativity scores among secondary school students regarding their School Type.

The same table also reflects that in the test of fluency, out of 544 secondary school students, the mean score of 147 secondary school students from girls' schools, 98 from boys' schools, 299 from co-ed schools are 62.18, 64.88, and 60.93 respectively. It means that the secondary-level students from the boys' schools have more fluency score than the other category secondary school students. Further, the one-way ANOVA revealed that ( $F=.974$ ,  $df= 2/541$  &  $p= .378$ ) the result is not significant. Hence, it indicates no significant differences in fluency scores among secondary school students regarding their School Type.

In the case of test of flexibility, out of 544 secondary school students, the mean score of 147 secondary school students from girls' schools, 98 from boys' schools, 299 from co-ed schools are 16.99, 14.66, and 15.17 respectively. It means that the secondary school students from the girls' schools have more flexibility score than the other category secondary school students. Further, the one-way ANOVA revealed that ( $F=6.339$ ,  $df= 2/541$  &  $p= .002$ ) the result is significant. Hence, it indicates significant differences in flexibility scores among secondary-level students regarding their school type. Further, the multiple comparisons [see Table No. 5.29 (B)] on flexibility scores through LSD test showed that the actual differences lie between girls' school and boys' school ( $p=.002<0.05$ ), and girls' school and co-ed School ( $p=.002<0.05$ ) secondary school students.

Analysis of originality test, out of 544 secondary school students, the mean score of 147 secondary school students from girls' schools, 98 from boys' schools, 299 from co-ed schools are 35.61, 42.50, and 41.87 respectively. It means that the secondary school students from the boys' schools have more originality score than the other category secondary-level students. Further, the one-way ANOVA revealed that ( $F=7.953$ ,  $df=2/541$  &  $p=.000$ ) the result is significant. Hence, it indicates significant differences in originality scores among secondary-level students concerning their types of schools. Further, the multiple comparisons [see Table No. 5.29.(B)] on originality scores through LSD test showed that the actual differences lie between girls' school and boys' school ( $p=.002<0.05$ ), and girls' school and co-ed School ( $p=.000<0.05$ ) secondary school students.

#### 5.2.6.2. Variations in Creativity and Its Dimensions concerning Class

**Table No. 5.30. Class-wise Mean Comparison of Creativity and its Dimensions**

	Class	N	Mean	SD	SEM	t	df	p
<b>Creativity</b>	Nine	288	131.51	45.145	2.660	.664	542	.507
	Ten	256	128.97	43.716	2.732			
<b>Fluency</b>	Nine	288	61.94	24.916	1.468	-.038	542	.970
	Ten	256	62.02	23.774	1.486			
<b>Flexibility</b>	Nine	288	15.65	5.350	.315	.344	542	.731
	Ten	256	15.48	6.334	.396			
<b>Originality</b>	Nine	288	41.62	17.051	1.005	1.945	542	.052
	Ten	256	38.80	16.696	1.044			

#### **Interpretation**

Table No. 5.30. represents that, out of 544 secondary school students, the mean score of 288 ninth grade secondary school students in the case of creativity (i.e., 131.51) is greater than the mean score of 256 tenth grade secondary school students (i.e., 128.97). It means that ninth grade secondary students have greater mean score of creativity than tenth grade secondary level students. Further, the t-test shows that ( $t=.664$ ,  $df=542$  &  $p=.507>0.05$ ) the result is not significant. Hence, it indicates no significant differences in creativity among secondary school students concerning their class.

For fluency, out of 544 secondary school students, the mean score of 288 ninth grade secondary school students (i.e., 61.94), which is less than the mean score of 256 tenth grade secondary school students (i.e., 62.02). It means that tenth grade secondary students have more fluency than ninth grade secondary school students. Further, the t-test

shows that ( $t=-.038$ ,  $df= 542$  &  $p=.970>0.05$ ) the result is not significant. Hence, it indicates no significant differences in fluency among secondary school students concerning their class.

In order to analysis of flexibility, out of 544 secondary school students, the mean score of 288 ninth grade secondary school students (i.e., 15.65), which is greater than the mean score of 256 tenth grade secondary school students (i.e., 15.48). It means that ninth grade secondary students have high mean score of flexibility than tenth grade secondary school students. Further, the t-test shows that ( $t=.344$ ,  $df= 542$  &  $p=.731>0.05$ ) the result is not significant. Hence, it indicates no significant differences in flexibility among secondary school students concerning their class.

In the case of originality, out of 544 secondary school students, the mean score of 288 ninth grade secondary school students (i.e., 41.62), which is higher than the mean score of 256 tenth grade secondary school students (i.e., 38.80). It means that ninth grade secondary school students have more originality than tenth grade secondary school students. Further, the t-test revealed that ( $t=1.945$ ,  $df= 542$  &  $p=.052>0.05$ ) the result is not significant. Hence, it indicates no significant differences in originality among secondary school students concerning their class.

### 5.2.6.3. Variations in Creativity and Its Dimensions concerning Gender

**Table No. 5.31. Gender-wise Mean Comparison of Creativity and its Dimensions**

	<b>Gender of the Student</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SEM</b>	<b>t</b>	<b>df</b>	<b>p</b>
<b>Creativity</b>	Male	258	130.46	42.421	2.641	.070	542	.944
	Female	286	130.19	46.288	2.737			
<b>Fluency</b>	Male	258	62.15	23.821	1.483	.154	542	.878
	Female	286	61.83	24.882	1.471			
<b>Flexibility</b>	Male	258	14.87	5.130	.319	- 2.674	542	<b>.008</b>
	Female	286	16.20	6.337	.375			
<b>Originality</b>	Male	258	41.30	15.791	.983	1.315	542	.189
	Female	286	39.39	17.872	1.057			

#### **Interpretation**

Table No. 5.31. shows that out of 544 secondary school students, the mean score of 258 male secondary school students in the case of creativity (i.e., 130.46) is higher than the mean score of 286 female secondary school students (i.e., 130.19). It means that male

secondary students have more creativity than female secondary school students. Further, the t-test found that ( $t=.070$ ,  $df= 542$  &  $p=.944>0.05$ ) the result is not significant. Hence, it indicates no significant differences in creativity among secondary school students concerning their gender.

For fluency, out of 544 secondary school students, the mean score of fluency of 258 male secondary school students is (i.e., 62.15) which is less than the mean score of 286 female of secondary school students (i.e., 61.83). It means that male secondary students have more fluency than female secondary school students. Further, the t-test reveals that ( $t=.154$ ,  $df= 542$  &  $p=.878>0.05$ ) the result is not significant. Hence, it indicates no significant differences in fluency among secondary school students concerning their gender.

In the case of flexibility, out of 544 secondary school students, the mean score of 258 male secondary school students is (i.e., 14.87) which is lower than the mean score of 286 female secondary school students (i.e., 16.20). It means that female secondary students have more flexibility than male secondary school students. Further, the t-test shows that ( $t=-2.674$ ,  $df= 542$  &  $p=.008<0.05$ ) the result is significant. Hence, it indicates significant differences in flexibility among secondary school students concerning their gender.

In the context of originality, out of 544 secondary school students, the mean score of 258 male secondary school students (i.e., 41.30) is greater than the mean score of 286 female secondary school students (i.e., 39.39). It means that male secondary students have more originality than female secondary school students. Further, the t-test shows that ( $t=1.315$ ,  $df= 542$  &  $p=.189>0.05$ ) the result is not significant. Hence, it indicates no significant differences in originality among secondary school students concerning their gender.

#### 5.2.6.4. Variations in Creativity and Its Dimensions concerning Family Type

**Table No. 5.32. Family Types-wise Mean Comparison of Creativity and its Dimensions**

	Family Type	N	Mean	SD	SEM	t	df	p
<b>Creativity</b>	Joint Family	185	130.41	45.732	3.362	.036	542	.972
	Nuclear or Broken Family	359	130.27	43.848	2.314			
<b>Fluency</b>	Joint Family	185	62.13	25.553	1.879	.102	542	.919
	Nuclear or	359	61.91	23.762	1.254			

	Broken Family							
<b>Flexibility</b>	Joint Family	185	15.36	5.533	.407	-.602	542	.548
	Nuclear or Broken Family	359	15.68	5.980	.316			
<b>Originality</b>	Joint Family	185	40.76	17.332	1.274	.457	542	.648
	Nuclear or Broken Family	359	40.06	16.736	.883			

**Interpretation**

Table No. 5.32. shows that out of 544 secondary school students, the mean score of 185 joint family secondary school students in the case of creativity (i.e., 130.41) is higher than the mean score of 359 nuclear or broken family of secondary school students(i.e., 130.27). It means that the joint family secondary students have more creativity than the nuclear or broken family secondary school students. Further, the t-test found that ( $t=.036$ ,  $df= 542$  &  $p=.972>0.05$ ) the result is not significant. Hence, it indicates no significant differences in creativity among secondary school students concerning their family type.

For fluency, out of 544 secondary school students, the mean score of 185 joint family secondary school students is (i.e., 62.13) which is less than the mean score of 359 nuclear or broken family of secondary school students (i.e., 61.91). It means that the joint family secondary students have more fluency than the nuclear or broken family secondary school students. Further, the t-test reveals that ( $t=.102$ ,  $df= 542$  &  $p=.919>0.05$ ) the result is not significant. Hence, it indicates no significant differences in fluency among secondary school students concerning their family type.

In the case of flexibility, out of 544 secondary school students, the mean score of 185 joint family secondary school students is (i.e., 15.36) which is lower than the mean score of 359 nuclear or broken family of secondary school students (i.e., 15.68). It means that the nuclear or broken family secondary students have more flexibility than the joint family secondary level students. Further, the t-test shows that ( $t=-.602$ ,  $df= 542$  &  $p=.548>0.05$ ) the result is not significant. Hence, it indicates no significant differences in flexibility among secondary school students concerning their family type.

In the context of originality, out of 544 secondary school students, the mean score of 185 joint family secondary school students is (i.e., 40.76) is greater than the mean score of 359 nuclear or broken family of secondary school students (i.e., 40.06). It means that the joint family secondary students have more originality than the nuclear or broken family secondary school students. Further, the t-test shows that ( $t=.457$ ,  $df= 542$  &

$p=.648>0.05$ ) the result is not significant. Hence, it indicates no significant differences in originality among secondary school students concerning their family type.

#### 5.2.6.5. Variations in Creativity and Its Dimensions concerning Number of Siblings

**Table No. 5.33. Number of Siblings-wise Mean Comparison of Creativity and its Dimensions**

	<b>Number of Siblings</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SEM</b>	<b>F</b>	<b>df</b>	<b>p</b>
<b>Creativity</b>	Single Child	122	133.92	42.568	3.854	.912	3/540	.435
	Having One Sibling	311	130.81	45.478	2.579			
	Having Two Siblings	69	126.78	43.390	5.224			
	Having Three to Six Siblings	42	122.02	43.977	6.786			
	Total	544	130.32	44.456	1.906			
<b>Fluency</b>	Single Child	122	64.37	24.384	2.208	1.045	3/540	.372
	Having One Sibling	311	62.19	24.389	1.383			
	Having Two Siblings	69	58.54	23.342	2.810			
	Having Three to Six Siblings	42	59.17	25.682	3.963			

	Total	544	61.98	24.363	1.045			
<b>Flexibility</b>	Single Child	122	15.67	5.636	.510	.458	3/540	.712
	Having One Sibling	311	15.35	5.756	.326			
	Having Two Siblings	69	16.12	5.974	.719			
	Having Three to Six Siblings	42	16.05	6.732	1.039			
	Total	544	15.57	5.829	.250			
<b>Originality</b>	Single Child	122	40.84	16.575	1.501	1.282	3/540	.280
	Having One Sibling	311	40.76	17.379	.985			
	Having Two Siblings	69	40.17	17.386	2.093			
	Having Three to Six Siblings	42	35.43	13.149	2.029			
	Total	544	40.29	16.928	.726			

#### **Interpretation**

The above Table No. 5.33. reflects that in the context of creativity scores, out of 544 secondary school students, the mean score of 122 secondary school students from single child, 311 students having one sibling, 69 students having two siblings, 42 students having three to six siblings are 133.92, 130.81, 126.78 and 122.02 respectively. It means that the secondary school students who are single child have more creativity score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=.912$ ,  $df= 3/540$  &  $p= .435$ ) the result is not significant. Hence, it indicates no

significant differences in creativity scores among secondary level students concerning their number of siblings.

For fluency scores, out of 544 secondary school students, the mean score of 122 secondary-level students from single child, 311 students having one sibling, 69 students having two siblings, 42 students having three to six siblings are 64.37, 62.19, 58.54 and 59.17 respectively. It means that the secondary school students from single child have more fluency score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=1.045$ ,  $df= 3/540$  &  $p= .372$ ) the result is not significant. Hence, it indicates no significant differences in fluency scores among secondary school students concerning their number of siblings.

Regarding the flexibility dimension, out of 544 secondary school students, the mean score of 122 secondary school students with single child, 311 students having one sibling, 69 students having two siblings, 42 students having three to six siblings are 15.67, 15.35, 16.12 and 16.05 respectively. It means that the secondary school students from having two siblings have more flexibility score than the other category secondary-level students. Further, the one-way ANOVA shows that ( $F=.458$ ,  $df= 3/540$  &  $p= .712$ ) the result is not significant. Hence, it indicates no significant differences in flexibility scores among secondary school students regarding their number of siblings.

In the context of originality scores, out of 544 secondary school students, the mean score of 122 secondary school students from single child, 311 students having one sibling, 69 students having two siblings, 42 students having three to six siblings are 40.84, 40.76, 40.17 and 35.43 respectively. It means that the secondary school students who are single child have more originality score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=1.282$ ,  $df= 3/540$  &  $p= .280$ ) the result is not significant. Hence, it indicates no significant differences in originality scores among secondary school students concerning number of siblings.

**5.2.6.6. Variations in Creativity and Its Dimensions concerning Father's Educational Qualifications**

**Table No. 5.34. (A) Father's Educational Qualifications-wise mean Comparison of Creativity and its Dimensions**

	<b>Father`s Educational Qualification</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SEM</b>	<b>F</b>	<b>df</b>	<b>p</b>
<b>Creativity</b>	Elementary (Up to Class VIII)	139	120.77	48.800	4.139	6.132	2/541	<b>.002</b>
	Secondary and Higher Secondary (Class-IX to XII)	286	130.95	41.078	2.429			
	Graduation and Above	119	139.93	45.078	4.132			
	Total	544	130.32	44.456	1.906			
<b>Fluency</b>	Elementary (Up to Class VIII)	139	56.60	26.631	2.259	7.457	2/541	<b>.001</b>
	Secondary and Higher Secondary (Class-IX to XII)	286	62.01	22.319	1.320			
	Graduation and Above	119	68.21	25.008	2.293			
	Total	544	61.98	24.363	1.045			
<b>Flexibility</b>	Elementary (Up to Class VIII)	139	15.11	5.844	.496	.857	2/541	.425
	Secondary and Higher Secondary (Class-IX to XII)	286	15.87	5.869	.347			

	Graduation and Above	119	15.40	5.718	.524			
	Total	544	15.57	5.829	.250			
<b>Originality</b>	Elementary (Up to Class VIII)	139	37.65	17.928	1.521	2.711	2/541	.067
	Secondary and Higher Secondary (Class-IX to XII)	286	40.71	16.068	.950			
	Graduation and Above	119	42.39	17.497	1.604			
	Total	544	40.29	16.928	.726			

**Table No. 5.34. (B) Father's Educational Qualifications-wise Multiple Comparison of Creativity and Fluency**

<b>Dependent Variable</b>	<b>(I) Father`s Educational Qualification</b>	<b>(J) Father`s Educational Qualification</b>	<b>Mean Difference (I-J)</b>	<b>Std. Error</b>	<b>Sig.</b>
<b>Creativity</b>	Elementary (Up to Class VIII)	Secondary and Higher Secondary (Class-IX to XII)	-10.185*	4.554	.026
		Graduation and Above	-19.163*	5.500	.001
	Secondary and Higher Secondary (Class-IX to XII)	Elementary (Up to Class VIII)	10.185*	4.554	.026
		Graduation and Above	-8.978	4.804	.062
Graduation	Elementary	19.163*	5.500	.001	

	and Above	(Up to Class VIII)			
		Secondary and Higher Secondary (Class-IX to XII)	8.978	4.804	.062
<b>Fluency</b>	Elementary (Up to Class VIII)	Secondary and Higher Secondary (Class-IX to XII)	-5.410*	2.490	.030
		Graduation and Above	-11.613*	3.007	.000
	Secondary and Higher Secondary (Class-IX to XII)	Elementary (Up to Class VIII)	5.410*	2.490	.030
		Graduation and Above	-6.203*	2.627	.019
	Graduation and Above	Elementary (Up to Class VIII)	11.613*	3.007	.000
		Secondary and Higher Secondary (Class-IX to XII)	6.203*	2.627	.019

### Interpretation

The above Table No. 5.34. (A) reflects that in the creativity, out of 544 secondary school students, the mean score of 139 secondary school students with elementary (up to class VIII) educational qualification father's, 286 secondary school students with secondary

and higher secondary (class-IX to XII) educational qualification father's, 119 secondary school students with graduation and above educational qualification father's are 120.77, 130.95 and 139.93 respectively. It means that the secondary school students with secondary and higher secondary educational qualification father's have more creativity score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=6.132$ ,  $df= 2/541$  &  $p= .002$ ) the result is significant. Hence, it indicates significant differences in creativity scores among secondary school students concerning their father's educational qualification. Further the multiple comparisons [see Table No.5.34. (B)] on creativity scores through LSD test showed that the actual differences lie between elementary (up to class VIII) and secondary and higher secondary (class-IX to XII) ( $p=.026<0.05$ ), and elementary (up to class VIII) and graduation and above ( $p = .001<0.05$ ).

The same table also represents that in the fluency scores of creativity, out of 544 secondary-level students, the mean score of 139 secondary school students with elementary (up to class VIII) educational qualification of father's, 286 secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of father's, 119 secondary school students with graduation and above educational qualification of father's are 56.60, 62.01 and 68.21 respectively. It means that the secondary school students with graduation and above educational qualification of father's have more fluency score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=7.457$ ,  $df= 2/541$  &  $p= .001$ ) the result is significant. Hence, it indicates significant differences in fluency scores among secondary school students concerning their father's educational qualification. Further the multiple comparisons [see Table No.5.34. (B)] on fluency scores through LSD test showed that the actual differences lie between elementary (up to class VIII) and secondary and higher secondary (class-IX to XII) ( $p=.030<0.05$ ), elementary (up to class VIII) and graduation and above ( $p=.000<0.05$ ) and Secondary and Higher Secondary (Class-IX to XII) and Graduation and above( $p=.019<0.05$ ).

The result regarding flexibility, out of 544 secondary school students, the mean score of 139 secondary school students with elementary (up to class VIII) educational qualification of father's, 286 secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of father's, 119 secondary school students with graduation and above educational qualification of father's are 15.11, 15.87 and 15.40 respectively. It means that the secondary school students with secondary and

higher secondary (class-IX to XII) educational qualification of father's have more flexibility score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=.857$ ,  $df= 2/541$  &  $p= .425$ ) the result is not significant. Hence, it indicates no significant differences in flexibility scores among secondary school students concerning their father's educational qualification.

In the context of originality, out of 544 secondary school students, the mean score of 139 secondary school students with elementary (up to class VIII) educational qualification of father's, 286 secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of father's, 119 secondary school students with graduation and above educational qualification of father's are 37.65, 40.71 and 42.39 respectively. It means that the secondary school students with graduation and above educational qualification of father's have more originality score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=2.711$ ,  $df= 2/541$  &  $p= .067$ ) the result is not significant. Hence, it indicates no significant differences in originality scores among secondary school students concerning their father's educational qualification.

#### 5.2.6.7. Variations in Creativity and Its Dimensions concerning Mother's Educational Qualifications

**Table No. 5.35. (A) Mother's Educational Qualification-wise Mean Comparison of Creativity and its Dimensions**

	<b>Mother`s Educational Qualification</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SEM</b>	<b>F</b>	<b>df</b>	<b>p</b>
<b>Creativity</b>	Elementary (Up to Class VIII)	155	118.85	43.145	3.466	7.432	2/541	<b>.001</b>
	Secondary and Higher Secondary (Class-IX to XII)	322	134.55	44.036	2.454			
	Graduation and Above	67	136.48	45.277	5.532			
	Total	544	130.32	44.456	1.906			

<b>Fluency</b>	Elementary (Up to Class VIII)	155	55.53	23.571	1.893	8.209	2/541	<b>.000</b>
	Secondary and Higher Secondary (Class-IX to XII)	322	64.05	23.906	1.332			
	Graduation and Above	67	66.96	25.758	3.147			
	Total	544	61.98	24.363	1.045			
<b>Flexibility</b>	Elementary (Up to Class VIII)	155	15.46	6.421	.516	.913	2/541	<b>.402</b>
	Secondary and Higher Secondary (Class-IX to XII)	322	15.80	5.569	.310			
	Graduation and Above	67	14.76	5.617	.686			
	Total	544	15.57	5.829	.250			
<b>Originality</b>	Elementary (Up to Class VIII)	155	36.19	15.811	1.270	6.589	2/541	<b>.001</b>
	Secondary and Higher Secondary (Class-IX to XII)	322	42.08	17.027	.949			
	Graduation and Above	67	41.19	17.560	2.145			
	Total	544	40.29	16.928	.726			

**Table No. 5.35. (B) Mother's Educational Qualification-wise Multiple Comparison of Creativity, Fluency and Originality**

<b>Dependent Variable</b>	<b>(I) Mother's Educational Qualification</b>	<b>(J) Mother's Educational Qualification</b>	<b>Mean Difference (I-J)</b>	<b>Std. Error</b>	<b>Sig.</b>	
<b>Creativity</b>	Elementary (Up to Class VIII)	Secondary and Higher Secondary (Class-IX to XII)	-15.701*	4.295	.000	
		Graduation and Above	-17.626*	6.424	.006	
	Secondary and Higher Secondary (Class-IX to XII)	Elementary (Up to Class VIII)	15.701*	4.295	.000	
		Graduation and Above	-1.925	5.900	.744	
	Graduation and Above	Elementary (Up to Class VIII)	17.626*	6.424	.006	
		Secondary and Higher Secondary (Class-IX to XII)	1.925	5.900	.744	
	<b>Fluency</b>	Elementary (Up to Class VIII)	Secondary and Higher Secondary (Class-IX to XII)	-8.524*	2.351	.000
			Graduation and Above	-11.426*	3.516	.001
Secondary and		Elementary	8.524*	2.351	.000	

	Higher Secondary (Class-IX to XII)	(Up to Class VIII)			
		Graduation and Above	-2.902	3.229	.369
	Graduation and Above	Elementary (Up to Class VIII)	11.426*	3.516	.001
		Secondary and Higher Secondary (Class-IX to XII)	2.902	3.229	.369
<b>Originality</b>	Elementary (Up to Class VIII)	Secondary and Higher Secondary (Class-IX to XII)	-5.897*	1.638	.000
		Graduation and Above	-5.007*	2.450	.041
	Secondary and Higher Secondary (Class-IX to XII)	Elementary (Up to Class VIII)	5.897*	1.638	.000
		Graduation and Above	.890	2.250	.693
	Graduation and Above	Elementary (Up to Class VIII)	5.007*	2.450	.041
		Secondary and Higher Secondary (Class-IX to XII)	-.890	2.250	.693

## Interpretation

The above Table No. 5.35. (A) reflects that in the context of creativity scores, out of 544 secondary school students, the mean score of 155 secondary school students with elementary (up to class VIII) educational qualification of mother's, 322 secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of mother's, 67 secondary school students with graduation and above educational qualification of mother's are 118.85, 134.55 and 136.48 respectively. It means that the secondary school students with graduation and above educational qualification of mother's have more creativity score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=7.432$ ,  $df= 2/541$  &  $p= .001$ ) the result is significant. Hence, it indicates significant differences in creativity scores among secondary school students concerning their mother's educational qualification. Further, the multiple comparisons [see Table No. 5.35. (B)] on creativity scores through LSD test showed that the actual differences lie between elementary (up to class VIII) and secondary and higher secondary (class-IX to XII) ( $p=.000<0.05$ ), and elementary (up to class VIII) and graduation and above ( $p=.006<0.05$ ).

For fluency scores, out of 544 secondary school students, the mean score of 155 secondary school students with elementary (up to class VIII) educational qualification of mother's, 322 secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of mother's, 67 secondary school students with graduation and above educational qualification of mother's are 55.53, 64.05 and 66.96 respectively. It means that the secondary school students with graduation and above educational qualification of mother's have more fluency score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=8.209$ ,  $df= 2/541$  &  $p= .000$ ) the result is significant. Hence, it indicates significant differences in fluency scores among secondary school students concerning their mother's educational qualification. Further, the multiple comparisons [see Table No. 5.35. (B)] on fluency scores through LSD test showed that the actual differences lie between elementary (up to class VIII) and secondary and higher secondary (class-IX to XII) ( $p=.000<0.05$ ), and elementary (up to class VIII) and graduation and above ( $p=.001<0.05$ ).

Regarding the flexibility dimension, out of 544 secondary school students, the mean score of 155 secondary school students with elementary (up to class VIII) educational qualification of mother's, 322 secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of mother's, 67 secondary school

students with graduation and above educational qualification of mother's are 15.46, 15.80 and 14.76 respectively. It means that the secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of mother's have more flexibility score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=.913$ ,  $df= 2/541$  &  $p= .402$ ) the result is not significant. Hence, it indicates no significant differences in flexibility scores among secondary school students concerning their mother's educational qualification.

In the context of originality scores, out of 544 secondary school students, the mean score of 155 secondary school students with elementary (up to class VIII) educational qualification of mother's, 322 secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of mother's, 67 secondary school students with graduation and above educational qualification of mother's are 36.19, 42.08 and 41.19 respectively. It means that the secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of mother's have more originality score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=6.589$ ,  $df= 2/541$  &  $p= .001$ ) the result is significant. Hence, it indicates significant differences in originality scores among secondary school students concerning their mother's educational qualification. Further, the multiple comparisons [see Table No.5.35. (B)] on originality scores through LSD test showed that the actual differences lie between elementary (up to class VIII) and secondary and higher secondary (class-IX to XII) ( $p=.000<0.05$ ), and elementary (up to class VIII) and graduation and above ( $p=.041<0.05$ ).

**5.2.6.8. Variations in Creativity and Its Dimensions concerning Family Monthly Income**

**Table No. 5.36. (A) Family Monthly Income-wise Mean Comparison of Creativity and its Dimensions.**

	<b>Family Monthly Income</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SEM</b>	<b>F</b>	<b>df</b>	<b>P</b>
<b>Creativity</b>	Up to 6,174	179	127.85	47.272	3.533	.669	4/539	.614
	6,175 - 18,496	180	133.17	39.928	2.976			
	18,497 - 30,830	76	134.37	47.212	5.416			
	30,831 - 46,128	40	128.45	41.798	6.609			
	More than 46,189	69	125.88	46.872	5.643			
	Total	544	130.32	44.456	1.906			
<b>Fluency</b>	Up to 6,174	179	60.27	26.539	1.984	.597	4/539	.665
	6,175 - 18,496	180	62.66	20.635	1.538			
	18,497 - 30,830	76	65.13	27.161	3.116			
	30,831 - 46,128	40	62.18	23.071	3.648			
	More than 46,189	69	61.07	25.202	3.034			
	Total	544	61.98	24.363	1.045			
<b>Flexibility</b>	Up to 6,174	179	15.86	5.980	.447	2.570	4/539	<b>.037</b>
	6,175 - 18,496	180	16.19	6.407	.478			

	18,497 - 30,830	76	15.63	4.915	.564			
	30,831 - 46,128	40	14.10	4.792	.758			
	More than 46,189	69	13.99	4.972	.599			
	Total	544	15.57	5.829	.250			
<b>Originality</b>	Up to 6,174	179	39.57	16.998	1.271	1.103	4/539	.354
	6,175 - 18,496	180	41.87	16.682	1.243			
	18,497 - 30,830	76	41.51	17.009	1.951			
	30,831 - 46,128	40	38.98	15.484	2.448			
	More than 46,189	69	37.49	18.009	2.168			
	Total	544	40.29	16.928	.726			

**Table No. 5.36. (B) Family Income-wise Multiple Comparison of Flexibility**

<b>Dependent Variable</b>	<b>(I) Family Monthly Income</b>	<b>(J) Family Monthly Income</b>	<b>Mean Difference (I-J)</b>	<b>Std. Error</b>	<b>Sig.</b>
<b>Flexibility</b>	Up to 6,174	6,175 - 18,496	-.334	.612	.585
		18,497 - 30,830	.229	.793	.773
		30,831 - 46,128	1.760	1.014	.083
		More than 46,189	1.875*	.821	.023
	6,175 - 18,496	Up to 6,174	.334	.612	.585
		18,497 - 30,830	.563	.793	.478
		30,831 - 46,128	2.094*	1.013	.039
		More than 46,189	2.209*	.821	.007

	18,497 - 30,830	Up to 6,174	-.229	.793	.773
		6,175 - 18,496	-.563	.793	.478
		30,831 - 46,128	1.532	1.132	.177
		More than 46,189	1.646	.964	.088
	30,831 - 46,128	Up to 6,174	-1.760	1.014	.083
		6,175 - 18,496	-2.094*	1.013	.039
		18,497 - 30,830	-1.532	1.132	.177
		More than 46,189	.114	1.152	.921
	More than 46,189	Up to 6,174	-1.875*	.821	.023
		6,175 - 18,496	-2.209*	.821	.007
		18,497 - 30,830	-1.646	.964	.088
		30,831 - 46,128	-.114	1.152	.921

### Interpretation

The above Table No. 5.36. (A) reflects that in the context of creativity scores, out of 544 secondary school students, the mean score of 179 secondary school students with up to 6,174 familial monthly income, 180 secondary school students with 6,175 - 18,496 familial monthly income, 76 secondary school students with 18,497 - 30,830 familial monthly income, 40 secondary school students with 30,831 - 46,128 familial monthly income, 69 secondary school students with More than 46,189 familial monthly income are 127.85, 133.17, 134.37, 128.45 and 125.88 respectively. It means that the secondary school students with 18,497 - 30,830 familial monthly income have more creativity score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=.669$ ,  $df= 4/539$  &  $p= .614$ ) the result is not significant. Hence, it indicates no significant differences in creativity scores among secondary school students concerning their monthly family income.

For fluency scores, out of 544 secondary school students, the mean score of 179 secondary-level students with up to 6,174 familial monthly income, 180 secondary school students with 6,175 - 18,496 familial monthly income, 76 secondary school students with 18,497 - 30,830 familial monthly income, 40 secondary school students with 30,831 - 46,128 familial monthly income, 69 secondary school students with More than 46,189 familial monthly income are 60.27, 62.66, 65.13, 62.18 and 61.07

respectively. It means that the secondary-level students with 18,497 - 30,830 familial monthly income have more fluency score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=.597$ ,  $df= 4/539$  &  $p= .665$ ) the result is not significant. Hence, it indicates no significant differences in fluency scores among secondary level students concerning their monthly family income.

Regarding the flexibility dimension, out of 544 secondary school students, the mean score of 179 secondary school students with up to 6,174 familial monthly income, 180 secondary school students with 6,175 - 18,496 familial monthly income, 76 secondary school students with 18,497 - 30,830 familial monthly income, 40 secondary school students with 30,831 - 46,128 familial monthly income, 69 secondary school students with More than 46,189 familial monthly income are 15.86, 16.19, 15.63, 14.10 and 13.99 respectively. It means that the secondary school students with 6,175 -18,496 familial monthly income have more flexibility score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=2.570$ ,  $df= 4/539$  &  $p= .037$ ) the result is significant. Hence, it indicates significant differences in flexibility scores among secondary school students concerning their monthly family income. Further, the multiple comparisons [see Table No. 5.36. (B)] on flexibility scores through LSD test showed that the actual differences lie between up to 6,174 and more than 46,189 ( $p=.023<0.05$ ), 6,175 - 18,496 and 30,831 - 46,128 ( $p=.039<0.05$ ), and 6,175 - 18,496 and more than 46,189 ( $p=.007<0.05$ ).

In the context of originality scores, out of 544 secondary school students, the mean score of 179 secondary school students with up to 6,174 familial monthly income, 180 secondary school students with 6,175 - 18,496 familial monthly income, 76 secondary school students with 18,497 - 30,830 familial monthly income, 40 secondary school students with 30,831 - 46,128 familial monthly income, 69 secondary school students with More than 46,189 familial monthly income are 39.57, 41.87, 41.51, 38.98 and 37.49 respectively. It means that the secondary school students with 6,175 - 18,496 familial monthly income have more originality score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=1.103$ ,  $df= 4/539$  &  $p= .354$ ) the result is not significant. Hence, it indicates no significant differences in originality scores among secondary school students concerning their monthly family income.

### 5.2.7. Variations in Verbal Creativity and its dimensions among the secondary school students in WB concerning the demographics

**H<sub>05</sub>:** Overall and dimension-wise verbal creativity (fluency, flexibility and originality) do not vary significantly among the secondary school students in WB concerning the demographics (School type, class, gender, family type, number of siblings, parental educational qualification and family Monthly income).

#### 5.2.7.1. Variations in Verbal Creativity and Its Dimensions concerning School Type

**Table No. 5.37. (A) School Type-wise Mean Comparison of Verbal Creativity and its Dimensions**

	School Type	N	Mean	SD	SEM	F	df	p
<b>Creativity in Verbal Test</b>	Girls' School	147	96.16	37.902	3.126	4.5 58	2/541	<b>.011</b>
	Boys' School	98	94.17	37.020	3.740			
	Co-ed School	299	85.97	35.541	2.055			
	Total	544	90.20	36.696	1.573			
<b>Fluency in Verbal Test</b>	Girls' School	147	55.18	23.490	1.937	4.5 75	2/541	<b>.011</b>
	Boys' School	98	54.70	22.731	2.296			
	Co-ed School	299	49.11	22.045	1.275			
	Total	544	51.76	22.714	.974			
<b>Flexibility in Verbal Test</b>	Girls' School	147	10.63	4.689	.387	16. 46 9	2/541	<b>.000</b>
	Boys' School	98	8.63	3.234	.327			
	Co-ed School	299	8.48	3.497	.202			
	Total	544	9.09	3.921	.168			
<b>Originalit y in Verbal Test</b>	Girls' School	147	21.87	11.274	.930	1.4 80	2/541	.228
	Boys' School	98	22.08	11.135	1.125			
	Co-ed School	299	20.31	11.093	.642			
	Total	544	21.05	11.160	.478			

**Table No. 5.37. (B) School Type-wise Multiple Comparison of Verbal Creativity, Fluency and Flexibility**

<b>Dependent Variable</b>	<b>(I) School Type</b>	<b>(J) School Type</b>	<b>Mean Difference (I-J)</b>	<b>Std. Error</b>	<b>Sig.</b>
<b>Creativity in Verbal Test</b>	Girls School	Boys' School	1.990	4.755	.676
		Co-ed School	10.190*	3.673	.006
	Boys' School	Girls' School	-1.990	4.755	.676
		Co-ed School	8.200	4.244	.054
	Co-ed School	Girls' School	-10.190*	3.673	.006
		Boys' School	-8.200	4.244	.054
<b>Fluency in Verbal Test</b>	Girls' School	Boys' School	.473	2.943	.872
		Co-ed School	6.063*	2.273	.008
	Boys' School	Girls' School	-.473	2.943	.872
		Co-ed School	5.590*	2.627	.034
	Co-ed School	Girls' School	-6.063*	2.273	.008
		Boys' School	-5.590*	2.627	.034
<b>Flexibility in Verbal Test</b>	Girls' School	Boys' School	1.993*	.497	.000
		Co-ed School	2.148*	.384	.000
	Boys' School	Girls' School	-1.993*	.497	.000
		Co-ed School	.154	.444	.728
	Co-ed School	Girls' School	-2.148*	.384	.000
		Boys' School	-.154	.444	.728

**Interpretation**

The above Table No. 5.37. (A) reflects that for creativity in verbal test, out of 544 secondary school students, the mean score of 147 secondary school students from girls' schools, 98 from boys' schools, 299 from co-ed schools are 96.16, 94.17, and 85.97 respectively. It means that the secondary school students from the girls' schools have more creativity in verbal test score than the other category secondary school students. Further, the one-way ANOVA revealed that ( $F=4.558$ ,  $df= 2/541$  &  $p= .011$ ) the result is significant. Hence, it indicates significant differences in creativity in verbal test scores among secondary school students on the basis of their types of schools. Further, the multiple comparisons [see Table No. 5.37. (B)] on creativity in verbal test scores through

LSD test showed that the actual differences lie between girls' school and co-ed school ( $p=.006<0.05$ ) secondary school students.

The same table also found that in the test of fluency in verbal test, out of 544 secondary school students, the mean score of 147 secondary school students from girls' schools, 98 from boys' schools, 299 from co-ed schools are 55.18, 54.70, and 49.11 respectively. It means that the secondary school students from the girls' schools have more fluency in verbal test score than the other category secondary school students. Further, the one-way ANOVA revealed that ( $F=4.575$ ,  $df= 2/541$  &  $p= .011$ ) the result is significant. Hence, it indicates significant differences in fluency in verbal test scores among secondary school students regarding their types of schools. Further, the multiple comparisons [see Table No. 5.37. (B)] on fluency in verbal test scores through LSD test showed that the actual differences lie between girls' school and co-ed School ( $p=.008<0.05$ ), and boys' school and co-ed school ( $p=.034<0.05$ ) secondary school students.

For the test of flexibility in verbal test, out of 544 secondary school students, the mean score of 147 secondary school students from girls' schools, 98 from boys' schools, 299 from co-ed schools are 10.63, 8.63, and 8.48 respectively. It means that the secondary school students from the girls' schools have more in flexibility verbal test score than the other category secondary school students. Further, the one-way ANOVA revealed that ( $F=16.469$ ,  $df= 2/541$  &  $p= .000$ ) the result is significant. Hence, it indicates significant differences in flexibility in verbal test scores among secondary school students concerning their types of schools. Further, the multiple comparisons [see Table No. 5.37. (B)] on flexibility in verbal test scores through LSD test showed that the actual differences lie between girls' school and boys' school ( $p=.000<0.05$ ), and girls' school and co-ed School ( $p=.000<0.05$ ) secondary school students.

In the context of test of originality in verbal test, out of 544 secondary school students, the mean score of 147 secondary school students from girls' schools, 98 from boys' schools, 299 from co-ed schools are 21.87, 22.08, and 20.31 respectively. It means that the secondary school students from the boys' schools have more in originality verbal test score than the other category secondary school students. Further, the one-way ANOVA revealed that ( $F=1.480$ ,  $df= 2/541$  &  $p= .228$ ) the result is not significant. Hence, it indicates no significant differences in originality in verbal test scores among secondary school students concerning their types of schools.

### 5.2.7.2 Variations in Verbal Creativity and Its Dimensions concerning Class

**Table No. 5.38. Class-wise Mean Comparison of Verbal Creativity and its Dimensions**

	Class	N	Mean	SD	SEM	t	df	p
<b>Creativity in Verbal Test</b>	Nine	288	89.77	37.439	2.206	-.289	542	.772
	Ten	256	90.69	35.909	2.244			
<b>Fluency in Verbal Test</b>	Nine	288	51.36	23.069	1.359	-.433	542	.665
	Ten	256	52.21	22.346	1.397			
<b>Flexibility in Verbal Test</b>	Nine	288	9.18	3.985	.235	.594	542	.553
	Ten	256	8.98	3.853	.241			
<b>Originality in Verbal Test</b>	Nine	288	21.08	11.582	.682	.059	542	.953
	Ten	256	21.02	10.688	.668			

#### Interpretation

Table No. 5.38. represents that, for creativity in verbal test out of 544 secondary school students, the mean score of 288 ninth grade secondary school students is (i.e., 89.77) which is less than the mean score of 256 tenth grade secondary school students (i.e., 90.69). It means that tenth grade secondary students have more creativity in verbal test score than ninth grade secondary school students. Further, the t-test found that ( $t=-.289$ ,  $df= 542$  &  $p=.772>0.05$ ) the result is not significant. Hence, it indicates no significant differences in creativity in verbal test score among secondary school students concerning their class.

For fluency in verbal test, out of 544 secondary school students, the mean score of 288 ninth grade secondary school students is (i.e., 51.36) which is lower than the mean score of 256 tenth grade secondary school students (i.e., 52.21). It means that tenth grade secondary school students have more fluency in verbal test score than ninth grade secondary school students. Further, the t-test result exposed that ( $t=-.433$ ,  $df= 542$  &  $p=.665>0.05$ ) the result is not significant. Hence, it suggested no significant differences in fluency in verbal test score among secondary school students on the basis of their class.

For flexibility in verbal test, out of 544 secondary school students, the mean score of 288 ninth grade secondary school students is (i.e., 9.18) which is greater than the mean score of 256 tenth grade secondary school students (i.e., 8.98). It means that ninth grade secondary students have more flexibility in verbal test score than tenth grade secondary school students. Further, the t-test shows that ( $t=.594$ ,  $df= 542$  &  $p=.553>0.05$ ) the result

is not significant. Hence, it indicates no significant difference in flexibility in verbal test score among secondary school students concerning their class.

The same table also shows that out of 544 secondary school students, the mean score of 288 ninth grade secondary school students in the case of originality in verbal test score (i.e., 21.08) is greater than the mean score of 256 tenth grade secondary school students (i.e., 21.02). It means that ninth grade secondary students have more originality in verbal test score than tenth grade secondary school students. Further, the t-test shows that ( $t=.059$ ,  $df= 542$  &  $p=.953>0.05$ ) the result is not significant. Hence, it indicates no significant differences in originality in verbal test score among secondary school students concerning their class.

### 5.2.7.3. Variations in Verbal Creativity and Its Dimensions concerning Gender

**Table No. 5.39. Gender-wise Mean Comparison of Verbal Creativity and its Dimensions**

	Gender	N	Mean	SD	SEM	t	df	p
<b>Creativity in Verbal Test</b>	Male	258	87.71	34.790	2.166	-1.505	542	.133
	Female	286	92.45	38.256	2.262			
<b>Fluency in Verbal Test</b>	Male	258	51.03	21.939	1.366	-.714	542	.476
	Female	286	52.42	23.411	1.384			
<b>Flexibility in Verbal Test</b>	Male	258	8.48	3.434	.214	-3.479	542	<b>.001</b>
	Female	286	9.64	4.245	.251			
<b>Originality in Verbal Test</b>	Male	258	20.06	10.489	.653	-1.966	542	<b>.050</b>
	Female	286	21.94	11.678	.691			

#### **Interpretation**

Table No. 5.39. shows that out of 544 secondary school students, the mean score of 258 male secondary school students in the case of creativity in verbal test (i.e., 87.71) is lower than the mean score of 286 female of secondary school students (i.e., 92.45). It means that female secondary students have more creativity in verbal test than male secondary school students. Further, the t-test expose that ( $t=-1.505$ ,  $df= 542$  &  $p=.133>0.05$ ) the result is not significant. Hence, it indicates no significant differences in creativity in verbal test among secondary-level students concerning their gender.

For fluency in verbal test, out of 544 secondary school students, the mean score of 258 male secondary school students is (i.e., 51.03) which is lower than the mean score of 286 female of secondary school students (i.e., 52.42). It means that female secondary students

have more fluency in verbal test than male secondary school students. Further, the t-test shows that ( $t=-.714$ ,  $df= 542$  &  $p=.476>0.05$ ) the result is not significant. Hence, it indicates no significant differences in fluency in verbal test among secondary school students regarding their gender.

For flexibility in verbal test, result reveals that out of 544 secondary school students, the mean score of 258 male secondary school students is (i.e., 8.48) is lower than the mean score of 286 female of secondary school students (i.e., 9.64). It means that female secondary students have more flexibility in verbal test than male secondary school students. Further, the t-test shows that ( $t=-3.479$ ,  $df= 542$  &  $p=.001<0.05$ ) the result is significant. Hence, it indicates significant differences in flexibility in verbal test among secondary school students concerning their gender.

The analysis also represents that out of 544 secondary school students, the mean score of 258 male secondary school students in the context of originality in verbal test scores is (i.e., 20.06) which is lower than the mean score of 286 female of secondary school students (i.e., 21.94). It means that female secondary students have more originality in verbal test scores than male secondary school students. Further, the t-test shows that ( $t=-1.966$ ,  $df= 542$  &  $p=.050=0.05$ ) the result is significant. Hence, it indicates significant differences in originality in verbal test among secondary school students concerning their gender.

#### 5.2.7.4. Variations in Verbal Creativity and Its Dimensions concerning Family Type

**Table No. 5.40. Family Type-wise Mean Comparison of Verbal Creativity and its Dimensions.**

	<b>Family Type</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SEM</b>	<b>t</b>	<b>df</b>	<b>p</b>
<b>Creativity in Verbal Test</b>	Joint Family	185	90.38	38.125	2.803	.082	542	.935
	Nuclear or Broken Family	359	90.11	35.992	1.900			
<b>Fluency in Verbal Test</b>	Joint Family	185	51.88	23.731	1.745	.086	542	.932
	Nuclear or	359	51.70	22.206	1.172			

	Broken Family							
<b>Flexibility in Verbal Test</b>	Joint Family	185	8.98	3.831	.282	- .438	542	.662
	Nuclear or Broken Family	359	9.14	3.971	.210			
<b>Originality in Verbal Test</b>	Joint Family	185	21.14	11.679	.859	.128	542	.898
	Nuclear or Broken Family	359	21.01	10.899	.575			

### Interpretation

Table No. 5.40. shows that out of 544 secondary school students, the mean score of 185 joint family secondary school students in the case of creativity in verbal test (i.e., 90.38) is higher than the mean score of 359 nuclear or broken family of secondary school students (i.e., 90.11). It means that the joint family secondary students have more creativity in verbal test than the nuclear or broken family secondary school students. Further, the t-test expose that ( $t=.082$ ,  $df= 542$  &  $p=.935>0.05$ ) the result is not significant. Hence, it indicates no significant differences in creativity in verbal test among secondary school students concerning their family type.

For fluency in verbal test, out of 544 secondary school students, the mean score of 185 joint family secondary school students is (i.e., 51.88) which is greater than the mean score of 359 nuclear or broken family of secondary school students (i.e., 51.70). It means that the joint family secondary students have more fluency in verbal test than the nuclear or broken family secondary school students. Further, the t-test shows that ( $t=.086$ ,  $df= 542$  &  $p=.932>0.05$ ) the result is not significant. Hence, it indicates no significant differences in fluency in verbal test among secondary school students regarding their family type.

For flexibility in verbal test, result reveals that out of 544 secondary school students, the mean score of 185 joint family secondary school students is (i.e., 8.98) is lower than the mean score of 359 nuclear or broken family of secondary school students (i.e., 9.14). It means that the nuclear or broken family secondary students have more flexibility in verbal test than the joint family secondary school students. Further, the t-test shows that ( $t=-.438$ ,  $df= 542$  &  $p=.662>0.05$ ) the result is not significant. Hence, it indicates no

significant differences in flexibility in verbal test among secondary school students concerning their family type.

The analysis also represents that out of 544 secondary school students, the mean score of 185 joint family secondary school students in the context of originality in verbal test scores is (i.e., 21.14) which is greater than the mean score of 359 nuclear or broken family of secondary school students (i.e., 21.01). It means that the joint family secondary students have more originality in verbal test scores than the nuclear or broken family secondary school students. Further, the t-test shows that ( $t=.128$ ,  $df= 542$  &  $p=.898>0.05$ ) the result is not significant. Hence, it indicates no significant differences in originality in verbal test among secondary school students concerning their family type.

#### 5.2.7.5. Variations in Verbal Creativity and Its Dimensions concerning Number of Siblings

**Table No. 5.41. Number of Siblings-wise Mean Comparison of Verbal Creativity and its Dimensions**

	Number of Siblings	N	Mean	SD	SEM	F	df	<i>p</i>
<b>Creativity in Verbal Test</b>	Single Child	122	94.30	36.701	3.323	1.174	3/540	.319
	Having One Sibling	311	90.34	36.666	2.079			
	Having Two Siblings	69	85.83	36.433	4.386			
	Having Three to Six Siblings	42	84.50	37.112	5.726			
	Total	544	90.20	36.696	1.573			
<b>Fluency in Verbal Test</b>	Single Child	122	54.52	22.962	2.079	1.362	3/540	.253
	Having One	311	51.82	22.463	1.274			

	Sibling							
	Having Two Siblings	69	48.13	22.135	2.665			
	Having Three to Six Siblings	42	49.24	24.451	3.773			
	Total	544	51.76	22.714	.974			
<b>Flexibility in Verbal Test</b>	Single Child	122	9.14	3.529	.319	.316	3/540	.814
	Having One Sibling	311	8.96	3.862	.219			
	Having Two Siblings	69	9.43	4.241	.511			
	Having Three to Six Siblings	42	9.26	4.889	.754			
	Total	544	9.09	3.921	.168			
<b>Originality in Verbal Test</b>	Single Child	122	21.79	11.567	1.047	1.148	3/540	.329
	Having One Sibling	311	21.31	11.126	.631			
	Having Two Siblings	69	20.17	11.756	1.415			
	Having Three to Six Siblings	42	18.43	8.879	1.370			

	Total	544	21.05	11.160	.478			
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**Interpretation**

The above Table No. 5.41. reflects that in the case of creativity in verbal test scores, out of 544 secondary school students, the mean score of 122 secondary school students from single child, 311 students having one sibling, 69 students having two siblings, 42 students having two to six siblings are 94.30, 90.34, 85.83 and 84.50 respectively. It means that the secondary school students having one sibling have more creativity in verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=1.174$ ,  $df= 3/540$  &  $p= .319$ ) the result is not significant. Hence, it indicates no significant differences in creativity in verbal test scores among secondary school students on the basis of their number of siblings.

The result concerning fluency in verbal test scores, out of 544 secondary school students, the mean score of 122 secondary school students from single child, 311 from having one sibling, 69 from having two siblings, 42 from having three to six siblings are 54.52, 51.82, 48.13, and 49.24 respectively. It means that the secondary school students who are single child have more fluency in verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=1.362$ ,  $df= 3/540$  &  $p= .253$ ) the result is not significant. Hence, it indicates no significant differences in fluency in verbal test scores among secondary school students concerning their number of siblings.

In the case of flexibility in verbal test scores, out of 544 secondary school students, the mean score of 122 secondary school students from single child, 311 from having one sibling, 69 from having two siblings, 42 from having two to six siblings are 9.14, 8.96, 9.43 and 9.26 respectively. It means that the secondary school students having two siblings have more flexibility in verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=.316$ ,  $df= 3/540$  &  $p= .814$ ) the result is not significant. Hence, it indicates no significant differences in flexibility in verbal test scores among secondary school students on the basis of their number of siblings.

The result revealed that in the dimension of originality in verbal test scores, out of 544 secondary school students, the mean score of 122 secondary school students from single child, 311 students having one sibling, 69 students having two siblings, 42 students having three to six siblings are 21.79, 21.31, 20.17 and 18.43 respectively. It means that the secondary school students who are single child have more originality in verbal test score than the other category secondary school students. Further, the one-way ANOVA

shows that ( $F=1.148$ ,  $df= 3/540$  &  $p= .329$ ) the result is not significant. Hence, it indicates no significant differences in originality in verbal test scores among secondary school students concerning their number of siblings.

#### 5.2.7.6. Variations in Verbal Creativity and Its Dimensions concerning Father`s Educational Qualifications

**Table No. 5.42. (A) Father`s Educational Qualifications-wise Mean Comparison of Verbal Creativity and its Dimensions**

	<b>Father`s Educational Qualification</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SEM</b>	<b>F</b>	<b>df</b>	<b>p</b>
<b>Creativity in Verbal Test</b>	Elementary (Up to Class VIII)	139	82.15	40.735	3.455	8.206	2/541	<b>.000</b>
	Secondary and Higher Secondary (Class-IX to XII)	286	89.86	33.259	1.967			
	Graduation and Above	119	100.45	37.443	3.432			
	Total	544	90.20	36.696	1.573			
<b>Fluency in Verbal Test</b>	Elementary (Up to Class VIII)	139	46.65	24.575	2.084	8.998	2/541	<b>.000</b>
	Secondary and Higher Secondary (Class-IX to XII)	286	51.45	20.907	1.236			
	Graduation and Above	119	58.47	23.148	2.122			
	Total	544	51.76	22.714	.974			
<b>Flexibility in Verbal</b>	Elementary (Up to Class	139	8.59	3.839	.326	1.534	2/541	.217

<b>Test</b>	VIII)							
	Secondary and Higher Secondary (Class-IX to XII)	286	9.22	4.017	.238			
	Graduation and Above	119	9.34	3.760	.345			
	Total	544	9.09	3.921	.168			
<b>Originality in Verbal Test</b>	Elementary (Up to Class VIII)	139	19.67	12.185	1.034	3.082	2/541	<b>.047</b>
	Secondary and Higher Secondary (Class-IX to XII)	286	20.88	10.089	.597			
	Graduation and Above	119	23.08	12.129	1.112			
	Total	544	21.05	11.160	.478			

**Table No. 5.42. (B) Father`s Educational Qualification -wise Multiple Comparison of Verbal Creativity, Fluency and Originality**

<b>Dependent Variable</b>	<b>(I) Father`s Educational Qualification</b>	<b>(J) Father`s Educational Qualification</b>	<b>Mean Difference (I-J)</b>	<b>Std. Error</b>	<b>Sig.</b>
<b>Creativity in Verbal Test</b>	Elementary (Up to Class VIII)	Secondary and Higher Secondary (Class-IX to XII)	-7.706*	3.745	.040
		Graduation and Above	-18.294*	4.523	.000
	Secondary and	Elementary	7.706*	3.745	.040

	Higher Secondary (Class-IX to XII)	(Up to Class VIII)				
		Graduation and Above	-10.589*	3.951	.008	
	Graduation and Above	Elementary (Up to Class VIII)	18.294*	4.523	.000	
		Secondary and Higher Secondary (Class-IX to XII)	10.589*	3.951	.008	
<b>Fluency in Verbal Test</b>	Elementary (Up to Class VIII)	Secondary and Higher Secondary (Class-IX to XII)	-4.804*	2.315	.038	
		Graduation and Above	-11.823*	2.796	.000	
	Secondary and Higher Secondary (Class-IX to XII)	Elementary (Up to Class VIII)	4.804*	2.315	.038	
		Graduation and Above	-7.020*	2.442	.004	
	Graduation and Above	Elementary (Up to Class VIII)	11.823*	2.796	.000	
		Secondary and Higher Secondary (Class-IX to XII)	7.020*	2.442	.004	
	<b>Originality in Verbal</b>	Elementary (Up to Class	Secondary and Higher	-1.209	1.149	.294

<b>Test</b>	VIII)	Secondary (Class-IX to XII)			
		Graduation and Above	-3.407*	1.388	.014
	Secondary and Higher Secondary (Class-IX to XII)	Elementary (Up to Class VIII)	1.209	1.149	.294
		Graduation and Above	-2.198	1.213	.070
	Graduation and Above	Elementary (Up to Class VIII)	3.407*	1.388	.014
		Secondary and Higher Secondary (Class-IX to XII)	2.198	1.213	.070

#### **Interpretation**

The above Table No. 5.42. (A) reflects that, in the case of creativity in verbal test, out of 544 secondary school students, the mean score of 139 secondary school students with elementary (up to class VIII) educational qualification of father's, 286 secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of father's, 119 secondary school students with graduation and above educational qualification of father's are 82.15, 89.86 and 100.45 respectively. It means that the secondary school students with graduation and above educational qualification of father's have more creativity in verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=8.206$ ,  $df= 2/541$  &  $p= .000$ ) the result is significant. Hence, it indicates significant differences in creativity in verbal test scores among secondary school students concerning their father's educational qualification. Further, the multiple comparisons [see Table No. 5.42. (B)] on creativity in verbal test scores through LSD test showed that the actual differences lie between elementary (up to class VIII) and secondary and higher secondary (class-IX to XII) ( $p=.040<0.05$ ), elementary (up to class VIII) and graduation and above ( $p=.000<0.05$ )

and Secondary and Higher Secondary (Class-IX to XII) and Graduation and above ( $p=.008<0.05$ ).

The result revealed that in the dimension of fluency in verbal test scores, out of 544 secondary school students, the mean score of 139 secondary school students with elementary (up to class VIII) educational qualification of father's, 286 secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of father's, 119 secondary school students with graduation and above educational qualification of father's are 46.65, 51.45 and 58.47 respectively. It means that the secondary school students with graduation and above educational qualification of father's have more fluency in verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=8.998$ ,  $df=2/541$  &  $p= .000$ ) the result is significant. Hence, it indicates significant differences in fluency in verbal test scores among secondary school students concerning their father's educational qualification. Further, the multiple comparisons [see Table No. 5.42. (B)] on fluency in verbal test scores through LSD test showed that the actual differences lie between elementary (up to class VIII) and secondary and higher secondary (class-IX to XII) ( $p=.038<0.05$ ), elementary (up to class VIII) and graduation and above ( $p=.000<0.05$ ) and Secondary and Higher Secondary (Class-IX to XII) and Graduation and above ( $p=.004<0.05$ ).

Regarding flexibility in verbal test scores, out of 544 secondary school students, the mean score of 139 secondary school students with elementary (up to class VIII) educational qualification of father's, 286 secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of father's, 119 secondary school students with graduation and above educational qualification of father's are 8.59, 9.22 and 9.34 respectively. It means that the secondary school students with graduation and above educational qualification of father's have more flexibility in verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=1.534$ ,  $df= 2/541$  &  $p= .217$ ) the result is not significant. Hence, it indicates no significant differences in flexibility in verbal test scores among secondary school students concerning their father's educational qualification.

The result concerning originality in verbal test score, out of 544 secondary school students, the mean score of 139 secondary school students with elementary (up to class VIII) educational qualification of father's, 286 secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of father's, 119 secondary school students with graduation and above educational qualification of father's are 19.67, 20.88 and 23.08 respectively. It means that the secondary school students with

graduation and above educational qualification of father's have more originality in verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=3.082$ ,  $df=2/541$  &  $p=.047$ ) the result is significant. Hence, it indicates significant differences in originality in verbal test scores among secondary school students concerning their father's educational qualification. Further, the multiple comparisons [see Table No. 5.42. (B)] on originality in verbal test scores through LSD test showed that the actual differences lie between elementary (up to class VIII) and graduation and above ( $p=.014<0.05$ ).

#### 5.2.7.7. Variations in Verbal Creativity and Its Dimensions concerning Mother's Educational Qualifications

**Table No. 5.43. (A) Mother's Educational Qualification -wise Mean Comparison of Verbal Creativity and its Dimensions**

	<b>Mother's Educational Qualification</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SEM</b>	<b>F</b>	<b>df</b>	<b>p</b>
<b>Creativity in Verbal Test</b>	Elementary (Up to Class VIII)	155	80.15	35.696	2.867	9.137	2/541	<b>.000</b>
	Secondary and Higher Secondary (Class-IX to XII)	322	93.18	35.832	1.997			
	Graduation and Above	67	99.15	38.722	4.731			
	Total	544	90.20	36.696	1.573			
<b>Fluency in Verbal Test</b>	Elementary (Up to Class VIII)	155	45.63	22.238	1.786	9.219	2/541	<b>.000</b>
	Secondary and Higher Secondary (Class-IX to	322	53.43	22.130	1.233			

	XII)							
	Graduation and Above	67	57.88	23.858	2.915			
	Total	544	51.76	22.714	.974			
<b>Flexibility in Verbal Test</b>	Elementary (Up to Class VIII)	155	8.75	4.216	.339	.873	2/541	.418
	Secondary and Higher Secondary (Class-IX to XII)	322	9.25	3.859	.215			
	Graduation and Above	67	9.06	3.494	.427			
	Total	544	9.09	3.921	.168			
<b>Originality in Verbal Test</b>	Elementary (Up to Class VIII)	155	18.35	9.782	.786	6.699	2/541	<b>.001</b>
	Secondary and Higher Secondary (Class-IX to XII)	322	21.94	11.284	.629			
	Graduation and Above	67	22.99	12.544	1.532			
	Total	544	21.05	11.160	.478			

**Table No. 5.43. (B) Mother`s Educational Qualification -wise Multiple Comparison of Verbal Creativity Fluency and Originality**

<b>Dependent Variable</b>	<b>(I) Mother`s Educational Qualification</b>	<b>(J) Mother`s Educational Qualification</b>	<b>Mean Difference (I-J)</b>	<b>Std. Error</b>	<b>Sig.</b>
<b>Creativity in Verbal Test</b>	Elementary (Up to Class VIII)	Secondary and Higher Secondary	-13.035*	3.535	.000

		(Class-IX to XII)			
		Graduation and Above	-19.001*	5.287	.000
	Secondary and Higher Secondary (Class-IX to XII)	Elementary (Up to Class VIII)	13.035*	3.535	.000
		Graduation and Above	-5.966	4.855	.220
	Graduation and Above	Elementary (Up to Class VIII)	19.001*	5.287	.000
		Secondary and Higher Secondary (Class-IX to XII)	5.966	4.855	.220
<b>Fluency in Verbal Test</b>	Elementary (Up to Class VIII)	Secondary and Higher Secondary (Class-IX to XII)	-7.803*	2.188	.000
		Graduation and Above	-12.248*	3.272	.000
	Secondary and Higher Secondary (Class-IX to XII)	Elementary (Up to Class VIII)	7.803*	2.188	.000
		Graduation and Above	-4.446	3.005	.140
	Graduation and Above	Elementary (Up to Class VIII)	12.248*	3.272	.000
		Secondary and Higher Secondary (Class-IX to XII)	4.446	3.005	.140
<b>Originality in Verbal Test</b>	Elementary (Up to Class VIII)	Secondary and Higher Secondary (Class-IX to XII)	-3.589*	1.080	.001
		Graduation and Above	-4.630*	1.615	.004
	Secondary and Higher Secondary (Class-IX to XII)	Elementary (Up to Class VIII)	3.589*	1.080	.001
		Graduation and Above	-1.041	1.483	.483
	Graduation and Above	Elementary (Up to Class VIII)	4.630*	1.615	.004

		VIII)			
		Secondary and Higher Secondary (Class-IX to XII)	1.041	1.483	.483

**Interpretation**

The above Table No. 5.43. (A) reflects that in the case of creativity in verbal test scores, out of 544 secondary school students, the mean score of 155 secondary school students with elementary (up to class VIII) educational qualification of mother's, 322 secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of mother's, 67 secondary school students with graduation and above educational qualification of mother's are 80.15, 93.18 and 99.15 respectively. It means that the secondary school students with graduation and above educational qualification of mother's have more creativity in verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=9.137$ ,  $df= 2/541$  &  $p=.000$ ) the result is significant. Hence, it indicates significant differences in creativity in verbal test scores among secondary school students concerning their mother's educational qualification. Further, the multiple comparisons [see Table No. 5.43. (B)] on creativity in verbal test scores through LSD test showed that the actual differences lie between elementary (up to class VIII) and secondary and higher secondary (class-IX to XII) ( $p=.000<0.05$ ), and elementary (up to class VIII) and graduation and above ( $p=.000<0.05$ ).

The result concerning fluency in verbal test scores, out of 544 secondary school students, the mean score of 155 secondary school students with elementary (up to class VIII) educational qualification of mother's, 322 secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of mother's, 67 secondary school students with graduation and above educational qualification of mother's are 45.63, 53.43 and 57.88 respectively. It means that the secondary school students with graduation and above educational qualification of mother's have more fluency in verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=9.219$ ,  $df= 2/541$  &  $p=.000$ ) the result is significant. Hence, it indicates significant differences in fluency in verbal test scores among secondary school students concerning their mother's educational qualification. Further, the multiple comparisons [see Table No. 5.43. (B)] on fluency in verbal test scores through LSD test showed that the actual differences lie between elementary (up to class VIII) and

secondary and higher secondary (class-IX to XII) ( $p=.000<0.05$ ), and elementary (up to class VIII) and graduation and above ( $p=.000<0.05$ ).

In the case of flexibility in verbal test scores, out of 544 secondary school students, the mean score of 155 secondary school students with elementary (up to class VIII) educational qualification of mother's, 322 secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of mother's, 67 secondary school students with graduation and above educational qualification of mother's are 8.75, 9.25 and 9.06 respectively. It means that the secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of mother's have more flexibility in verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=.873$ ,  $df= 2/541$  &  $p= .418$ ) the result is not significant. Hence, it indicates no significant differences in flexibility in verbal test scores among secondary school students concerning their mother's educational qualification.

The result revealed that in the dimension of originality in verbal test scores, out of 544 secondary school students, the mean score of 155 secondary school students with elementary (up to class VIII) educational qualification of mother's, 322 secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of mother's, 67 secondary school students with graduation and above educational qualification of mother's are 18.35, 21.94 and 22.99 respectively. It means that the secondary school students with graduation and above educational qualification of mother's have more originality in verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=6.699$ ,  $df= 2/541$  &  $p=.001$ ) the result is significant. Hence, it indicates significant differences in originality in verbal test scores among secondary school students concerning their mother's educational qualification. Further, the multiple comparisons [see Table No. 5.43. (B)] on originality in verbal test scores through LSD test showed that the actual differences lie between elementary (up to class VIII) and secondary and higher secondary (class-IX to XII) ( $p=.001<0.05$ ), and elementary (up to class VIII) and graduation and above ( $p=.004<0.05$ ).

#### **5.2.7.8. Variations in Verbal Creativity and Its Dimensions concerning Family Monthly Income**

**Table No. 5.44. Family Monthly Income-wise Mean Comparison of Verbal Creativity and its Dimensions.**

	<b>Family Monthly Income</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SEM</b>	<b>F</b>	<b>df</b>	<b>P</b>
<b>Creativity in Verbal Test</b>	Up to 6,174	179	86.84	40.307	3.013	.582	4/539	.675
	6,175 - 18,496	180	91.82	32.059	2.390			
	18,497 - 30,830	76	92.42	37.905	4.348			
	30,831 - 46,128	40	92.70	35.263	5.575			
	More than 46,189	69	90.84	38.088	4.585			
	Total	544	90.20	36.696	1.573			
<b>Fluency in Verbal Test</b>	Up to 6,174	179	49.73	24.888	1.860	.644	4/539	.632
	6,175 - 18,496	180	52.14	19.454	1.450			
	18,497 - 30,830	76	54.12	25.163	2.886			
	30,831 - 46,128	40	53.38	21.156	3.345			
	More than 46,189	69	52.51	22.972	2.765			
	Total	544	51.76	22.714	.974			
<b>Flexibility in Verbal Test</b>	Up to 6,174	179	9.04	4.297	.321	.853	4/539	.492
	6,175 - 18,496	180	9.35	3.896	.290			
	18,497 - 30,830	76	9.32	3.906	.448			
	30,831 - 46,128	40	8.25	2.817	.445			
	More than 46,189	69	8.75	3.512	.423			
	Total	544	9.09	3.921	.168			
<b>Originality</b>	Up to 6,174	179	20.09	11.833	.884	.764	4/539	.549

<b>in Verbal Test</b>	6,175 - 18,496	180	21.96	10.424	.777			
	18,497 - 30,830	76	20.74	10.031	1.151			
	30,831 - 46,128	40	22.25	11.408	1.804			
	More than 46,189	69	20.83	12.275	1.478			
	Total	544	21.05	11.160	.478			

### Interpretation

The above Table No. 5.44. reflects that in the case of creativity in verbal test scores, out of 544 secondary school students, the mean score of 179 secondary school students with up to 6,174 familial monthly income, 180 secondary-level students with 6,175 - 18,496 familial monthly income, 76 secondary school students with 18,497 - 30,830 familial monthly income, 40 secondary school students with 30,831 - 46,128 familial monthly income, 69 secondary school students with More than 46,189 familial monthly income are 86.84, 91.82, 92.42, 92.70 and 90.84 respectively. It means that the secondary school students with 30,831 - 46,128 familial monthly income have more creativity in verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=.582$ ,  $df= 4/539$  &  $p= .675$ ) the result is not significant. Hence, it indicates no significant differences in creativity in verbal test scores among secondary school students concerning their monthly family income.

The result concerning fluency in verbal test scores, out of 544 secondary school students, the mean score of 179 secondary school students with up to 6,174 familial monthly income, 180 secondary school students with 6,175 - 18,496 familial monthly income, 76 secondary school students with 18,497 - 30,830 familial monthly income, 40 secondary school students with 30,831 - 46,128 familial monthly income, 69 secondary school students with More than 46,189 familial monthly income are 49.73, 52.14, 54.12, 53.38 and 52.51 respectively. It means that the secondary school students with 18,497 - 30,830 familial monthly income have more fluency in verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=.644$ ,  $df= 4/539$  &  $p= .632$ ) the result is not significant. Hence, it indicates no significant differences in fluency in verbal test scores among secondary level students concerning their monthly family income.

In the case of flexibility in verbal test scores, out of 544 secondary school students, the mean score of 179 secondary school students with up to 6,174 familial monthly income, 180 secondary school students with 6,175 - 18,496 familial monthly income, 76 secondary school students with 18,497 - 30,830 familial monthly income, 40 secondary school students with 30,831 - 46,128 familial monthly income, 69 secondary school students with More than 46,189 familial monthly income are 9.04, 9.35, 9.32, 8.25 and 8.75 respectively. It means that the secondary school students with 6,175 - 18,496 familial monthly income have more flexibility in verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=.853$ ,  $df= 4/539$  &  $p= .492$ ) the result is not significant. Hence, it indicates no significant differences in flexibility in verbal test scores among secondary school students concerning their monthly family income.

The result revealed that in the dimension of originality in verbal test scores, out of 544 secondary school students, the mean score of 179 secondary school students with up to 6,174 familial monthly income, 180 secondary school students with 6,175 - 18,496 familial monthly income, 76 secondary school students with 18,497 - 30,830 familial monthly income, 40 secondary school students with 30,831 - 46,128 familial monthly income, 69 secondary school students with More than 46,189 familial monthly income are 20.09, 21.96, 20.74, 22.25, and 20.83 respectively. It means that the secondary school students with 30,831 - 46,128 familial monthly income have more originality in verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=.764$ ,  $df= 4/539$  &  $p= .549$ ) the result is not significant. Hence, it indicates no significant differences in originality in verbal test scores among secondary level students concerning their monthly family income.

#### **5.2.8. Variations in Non- Verbal Creativity and its dimensions among the secondary school students in WB concerning the demographics**

**H<sub>06</sub>:** *Overall and dimension-wise non-verbal creativity (fluency, flexibility and originality) do not vary significantly among the secondary school students in WB concerning the demographics (School type, class, gender, family type, number of siblings, parental educational qualification and family monthly income).*

**5.2.8.1. Variations in Verbal Creativity and Its Dimensions concerning School Types**

**Table No. 5.45. (A) School Types -wise Mean Comparison of Non-Verbal Creativity and its Dimensions**

	<b>School Type</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SEM</b>	<b>F</b>	<b>df</b>	<b>p</b>
<b>Creativity in Non-Verbal Test</b>	Girls' School	147	32.42	15.436	1.273	23.758	2/541	<b>.000</b>
	Boys' School	98	41.66	17.173	1.735			
	Co-ed School	299	43.38	15.836	.916			
	Total	544	40.11	16.635	.713			
<b>Fluency in Non-Verbal Test</b>	Girls' School	147	7.01	3.537	.292	59.287	2/541	<b>.000</b>
	Boys' School	98	10.17	4.956	.501			
	Co-ed School	299	11.82	4.564	.264			
	Total	544	10.22	4.836	.207			
<b>Flexibility in Non-Verbal Test</b>	Girls' School	147	6.36	3.969	.327	1.607	2/541	.201
	Boys' School	98	6.03	2.477	.250			
	Co-ed School	299	6.70	3.239	.187			
	Total	544	6.49	3.340	.143			
<b>Originality in Non-Verbal Test</b>	Girls' School	147	13.74	9.515	.785	31.604	2/541	<b>.000</b>
	Boys' School	98	20.42	10.920	1.103			
	Co-ed School	299	21.57	9.737	.563			
	Total	544	19.24	10.445	.448			

**Table No. 5.45. (B) School Types-wise Multiple Comparison of Non-Verbal Creativity, Fluency and Originality**

<b>Dependent Variable</b>	<b>(I) Type of School</b>	<b>(J) Type of School</b>	<b>Mean Difference (I-J)</b>	<b>Std. Error</b>	<b>Sig.</b>
<b>Creativity in Non-Verbal Test</b>	Girls' School	Boys' School	-9.241*	2.084	.000
		Co-ed School	-10.963*	1.610	.000
	Boys' School	Girls' School	9.241*	2.084	.000
		Co-ed School	-1.721	1.860	.355
	Co-ed School	Girls' School	10.963*	1.610	.000
		Boys' School	1.721	1.860	.355
<b>Fluency in Non-Verbal Test</b>	Girls' School	Boys' School	-3.167*	.572	.000
		Co-ed School	-4.813*	.442	.000
	Boys' School	Girls' School	3.167*	.572	.000
		Co-ed School	-1.646*	.511	.001
	Co-ed School	Girls' School	4.813*	.442	.000
		Boys' School	1.646*	.511	.001
<b>Originality in Non-Verbal Test</b>	Girls' School	Boys' School	-6.677*	1.291	.000
		Co-ed School	-7.824*	.997	.000
	Boys' School	Girls' School	6.677*	1.291	.000
		Co-ed School	-1.147	1.153	.320
	Co-ed School	Girls' School	7.824*	.997	.000
		Boys' School	1.147	1.153	.320

**Interpretation**

The above Table No.5. 45. (A) Reflects that on the basis of creativity in non-verbal test, result revealed that out of 544 secondary school students, the mean score of 147 secondary school students from girls' schools, 98 from boys' schools, 299 from co-ed schools are 32.42, 41.66, and 43.38 respectively. It means that the secondary school students from the co-ed schools have more in creativity in non-verbal test than the other category secondary school students. Further, the one-way ANOVA revealed that ( $F=23.758$ ,  $df= 2/541$  &  $p= .000$ ) the result is significant. Hence, it indicates significant differences in creativity in non-verbal test scores among secondary school students concerning their types of schools. Further, the multiple comparisons [see Table No.5.45.

(B)] on creativity in non-verbal test scores through LSD test showed that the actual differences lie between girls' school and boys' school ( $p=.000<0.05$ ), and girls' school and co-ed school ( $p=.000<0.05$ ) secondary school students.

Table also revealed reflects that in the fluency in non-verbal test, out of 544 secondary school students, the mean score of 147 secondary school students from girls' schools, 98 from boys' schools, 299 from co-ed schools are 7.01, 10.17, and 11.82 respectively. It means that the secondary school students from the co-ed schools have more in fluency in non-verbal test than the other category secondary school students. Further, the one-way ANOVA revealed that ( $F=59.287$ ,  $df= 2/541$  &  $p= .000$ ) the result is significant. Hence, it indicates significant differences in fluency in non-verbal test scores among secondary school students concerning their types of schools. Further, the multiple comparisons [see Table No.5.45. (B)] on fluency in non-verbal test scores through LSD test showed that the actual differences lie between girls' school and boys' school ( $p=.000<0.05$ ), and girls' school and co-ed school ( $p=.000<0.05$ ), boys' school and co-ed school ( $p=.001<0.05$ ) secondary-level students.

For flexibility in non-verbal test, out of 544 secondary school students, the mean score of 147 secondary school students from girls' schools, 98 from boys' schools, 299 from co-ed schools are 6.36, 6.03, and 6.70 respectively. It means that the secondary school students from the co-ed schools have more in flexibility in non-verbal test than the other category secondary school students. Further, the one-way ANOVA revealed that ( $F=1.607$ ,  $df= 2/541$  &  $p= .201$ ) the result is not significant. Hence, it indicates no significant differences in flexibility in non-verbal test scores among secondary school students concerning their types of schools.

For originality in non-verbal test, out of 544 secondary school students, the mean score of 147 secondary school students from girls' schools, 98 from boys' schools, 299 from co-ed schools are 13.74, 20.42, and 21.57 respectively. It means that the secondary school students from the co-ed schools have more in originality in non-verbal test than the other category secondary school students. Further, the one-way ANOVA revealed that ( $F=31.604$ ,  $df= 2/541$  &  $p= .000$ ) the result is significant. Hence, it indicates significant differences in originality in non-verbal test scores among secondary school students concerning their types of schools. Further, the multiple comparisons [see Table No. 5.45. (B)] on originality in non-verbal test scores through LSD test showed that the actual differences lie between girls' school and boys' school ( $p=.000<0.05$ ), and girls' school and co-ed school ( $p=.000<0.05$ ), secondary school students.

### 5.2.8.2. Variations in Non- Verbal Creativity and Its Dimensions concerning Class

**Table No. 5.46. Class-wise Mean Comparison of Non- Verbal Creativity and its Dimensions**

	Class	N	Mean	SD	SEM	t	df	p
<b>Creativity in Non-Verbal Test</b>	Nine	288	41.74	16.926	.997	2.426	542	<b>.016</b>
	Ten	256	38.29	16.140	1.009			
<b>Fluency in Non-Verbal Test</b>	Nine	288	10.58	4.807	.283	1.850	542	.065
	Ten	256	9.82	4.845	.303			
<b>Flexibility in Non-Verbal Test</b>	Nine	288	6.47	2.934	.173	-.097	542	.923
	Ten	256	6.50	3.751	.234			
<b>Originality in Non-Verbal Test</b>	Nine	288	20.55	10.762	.634	3.105	542	<b>.002</b>
	Ten	256	17.78	9.893	.618			

#### **Interpretation**

Table No. 5.46. shows that out of 544 secondary school students, the mean score of 288 ninth grade secondary school students in the case of creativity in non-verbal test score (i.e., 41.74) is greater than the mean score of 256 tenth grade secondary school students (i.e., 38.29). It means that ninth grade secondary students have more creativity in non-verbal test score than tenth grade secondary school students. Further, the t-test shows that ( $t=2.426$ ,  $df= 542$  &  $p=.016<0.05$ ) the result is significant. Hence, it indicates significant differences in creativity in non-verbal test score among secondary school students concerning their class.

For fluency in non-verbal test, out of 544 secondary school students, the mean score of 288 ninth grade secondary school students is (i.e., 10.58) which is greater than the mean score of 256 tenth grade secondary school students (i.e., 9.82). It means that ninth grade secondary students have more fluency in non-verbal test score than tenth grade secondary school students. Further, the t-test expressed that ( $t=1.850$ ,  $df= 542$  &  $p=.065>0.05$ ) the result is no significant. Hence, it indicates no significant differences in fluency in non-verbal test score among secondary school students concerning their class.

For flexibility in non-verbal test, out of 544 secondary school students, the mean score of 288 ninth grade secondary school students is (i.e., 6.47) which is less than the mean score of 256 tenth grade secondary school students (i.e., 6.50). It means that tenth grade secondary students have more flexibility in non-verbal test score than ninth grade

secondary school students. Further, the t-test represents that ( $t=-.097$ ,  $df= 542$  &  $p=.923>0.05$ ) the result is no significant. Hence, it indicates no significant difference in flexibility in non-verbal test score among secondary school students concerning their class.

Analysis of the study for originality in non-verbal test score reflects that out of 544 secondary school students, the mean score of 288 ninth grade secondary school students is (i.e., 20.55) which is greater than the mean score of 256 tenth grade secondary school students (i.e., 17.78). It means that ninth grade secondary students have more originality in non-verbal test score than tenth grade secondary school students. Further, the t-test shows that ( $t=3.105$ ,  $df= 542$  &  $p=.002<0.05$ ) the result is significant. Hence, it indicates significant differences in originality in non-verbal test score among secondary school students concerning their class.

### 5.2.8.3. Variations in Non- Verbal Creativity and Its Dimensions concerning Gender

**Table No. 5.47. Gender-wise Mean Comparison of Non-Verbal Creativity and its Dimensions.**

	Gender	N	Mean	SD	SEM	t	df	p
<b>Creativity in Non-Verbal Test</b>	Male	258	42.74	16.697	1.040	3.542	542	<b>.000</b>
	Female	286	37.74	16.245	.961			
<b>Fluency in Non-Verbal Test</b>	Male	258	11.12	4.912	.306	4.193	542	<b>.000</b>
	Female	286	9.41	4.625	.274			
<b>Flexibility in Non-Verbal Test</b>	Male	258	6.40	3.233	.201	-.596	542	.551
	Female	286	6.57	3.438	.203			
<b>Originality in Non-Verbal Test</b>	Male	258	21.24	10.229	.637	4.292	542	<b>.000</b>
	Female	286	17.45	10.327	.611			

#### **Interpretation**

Table No. 5.47. shows that, in the context of creativity in non-verbal test, out of 544 secondary school students, the mean score of 258 male secondary school students in the

case of creativity in non-verbal test scores (i.e., 42.74) is greater than the mean score of 286 female of secondary school students (i.e., 37.74). It means that male secondary students have more creativity in non-verbal test scores than female secondary school students. Further, the t-test shows that ( $t=3.542$ ,  $df= 542$  &  $p=.000<0.05$ ) the result is significant. Hence, it indicates significant differences in creativity in non-verbal test scores among secondary school students concerning their gender.

For fluency in non-verbal test, out of 544 secondary school students, the mean score of 258 male secondary school students is (i.e., 11.12) which is higher than the mean score of 286 female of secondary school students (i.e., 9.41). It means that male secondary students have more fluency in non-verbal test scores than female secondary school students. Further, the t-test reveals that ( $t=4.193$ ,  $df= 542$  &  $p=.00<0.05$ ) the result is significant. Hence, it indicates significant differences in fluency in non-verbal test scores among secondary school students concerning their gender.

In the context of flexibility in non-verbal test, out of 544 secondary school students, the mean score of 258 male secondary school students is (i.e., 6.40) which is lower than the mean score of 286 female of secondary school students (i.e., 6.57). It means that female secondary students have more flexibility in non-verbal test scores than male secondary school students. Further, the t-test found that ( $t=-.596$ ,  $df= 542$  &  $p=.551>0.05$ ) the result is not significant. Hence, it indicates no significant differences in flexibility in non-verbal test scores among secondary school students concerning their gender.

The above table also represents that out of 544 secondary school students, the mean score of 258 male secondary school students in the case of originality in non-verbal test scores (i.e., 21.24) is greater than the mean score of 286 female of secondary school students (i.e., 17.45). It means that male secondary students have more originality in non-verbal test scores than female secondary school students. Further, the t-test shows that ( $t=4.292$ ,  $df= 542$  &  $p=.000<0.05$ ) the result is significant. Hence, it indicates significant differences in originality in non-verbal test scores among secondary school students concerning their gender.

#### 5.2.8.4. Variations in Non- Verbal Creativity and Its Dimensions concerning Family Type

**Table No. 5.48. Family Types -wise Mean Comparison of Non-Verbal Creativity and its Dimensions**

	<b>Family Type</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SEM</b>	<b>t</b>	<b>df</b>	<b>p</b>
<b>Creativity in Non-Verbal Test</b>	Joint Family	185	40.03	16.774	1.233	-.086	542	.932
	Nuclear or Broken Family	359	40.16	16.586	.875			
<b>Fluency in Non-Verbal Test</b>	Joint Family	185	10.25	4.846	.356	.109	542	.913
	Nuclear or Broken Family	359	10.21	4.837	.255			
<b>Flexibility in Non-Verbal Test</b>	Joint Family	185	6.38	3.082	.227	-.536	542	.592
	Nuclear or Broken Family	359	6.54	3.469	.183			
<b>Originality in Non-Verbal Test</b>	Joint Family	185	19.62	10.866	.799	.604	542	.546
	Nuclear or Broken Family	359	19.05	10.231	.540			

#### **Interpretation**

Table No. 5.48. shows that on the basis of creativity in non-verbal test, out of 544 secondary-level students, the mean score of 185 joint family secondary school students in

the case of creativity in non-verbal test scores (i.e., 40.03) is lower than the mean score of 359 nuclear or broken family of secondary school students (i.e., 40.16). It means that the nuclear or broken family secondary students have more creativity in non-verbal test scores than the joint family secondary school students. Further, the t-test shows that ( $t=-.086$ ,  $df= 542$  &  $p=.932>0.05$ ) the result is not significant. Hence, it indicates no significant differences in creativity in non-verbal test scores among secondary school students concerning their family type.

For fluency in non-verbal test, out of 544 secondary-level students, the mean score of 185 joint family secondary school students is (i.e., 10.25) which is higher than the mean score of 359 nuclear or broken family of secondary school students (i.e., 10.21). It means that the joint family secondary students have more fluency in non-verbal test scores than the nuclear or broken family secondary school students. Further, the t-test reveals that ( $t=.109$ ,  $df= 542$  &  $p=.913>0.05$ ) the result is not significant. Hence, it indicates no significant differences in fluency in non-verbal test scores among secondary school students concerning their family type.

In the context of flexibility in non-verbal test, out of 544 secondary school students, the mean score of 185 joint family secondary school students is (i.e., 6.38) which is lower than the mean score of 359 nuclear or broken family of secondary school students (i.e., 6.54). It means that the nuclear or broken family secondary students have more flexibility in non-verbal test scores than the joint family secondary school students. Further, the t-test found that ( $t=-.536$ ,  $df= 542$  &  $p=.592>0.05$ ) the result is not significant. Hence, it indicates no significant differences in flexibility in non-verbal test scores among secondary school students concerning their family type.

The above table also represents that out of 544 secondary school students, the mean score of 185 joint family secondary school students in the case of originality in non-verbal test scores (i.e., 19.62) is greater than the mean score of 359 nuclear or broken family of secondary school students (i.e., 19.05). It means that the joint family secondary students have more originality in non-verbal test scores than the nuclear or broken family secondary school students. Further, the t-test shows that ( $t=.604$ ,  $df= 542$  &  $p=.546>0.05$ ) the result is not significant. Hence, it indicates no significant differences in originality in non-verbal test scores among secondary school students concerning their family type.

**5.2.8.5. Variations in Non- Verbal Creativity and Its Dimensions concerning Number of Siblings**

**Table No. 5.49. Number of Siblings-wise Mean Comparison of Non- Verbal Creativity and its Dimensions**

	<b>Number of Siblings</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SEM</b>	<b>F</b>	<b>df</b>	<b>p</b>
<b>Creativity in Non-Verbal Test</b>	Single Child	122	39.62	17.293	1.566	.479	3/540	.697
	Having One Sibling	311	40.47	16.997	.964			
	Having Two Siblings	69	40.96	15.192	1.829			
	Having Three to Six Siblings	42	37.52	14.331	2.211			
	Total	544	40.11	16.635	.713			
<b>Fluency in Non-Verbal Test</b>	Single Child	122	9.85	4.987	.452	.414	3/540	.743
	Having One Sibling	311	10.37	4.955	.281			
	Having Two Siblings	69	10.41	4.330	.521			
	Having Three to Six Siblings	42	9.93	4.341	.670			
	Total	544	10.22	4.836	.207			
<b>Flexibility in Non-Verbal Test</b>	Single Child	122	6.53	3.793	.343	.297	3/540	.827
	Having One Sibling	311	6.38	3.302	.187			
	Having Two Siblings	69	6.68	2.847	.343			
	Having Three to Six Siblings	42	6.79	3.033	.468			
	Total	544	6.49	3.340	.143			

<b>Originality in Non- Verbal Test</b>	Single Child	122	19.06	11.291	1.022	.821	3/540	.48
	Having One Sibling	311	19.45	10.552	.598			
	Having Two Siblings	69	20.00	9.384	1.130			
	Having Three to Six Siblings	42	17.00	8.608	1.328			
	Total	544	19.24	10.445	.448			

### Interpretation

The above Table No. 5.49. reflects that in the context of creativity in non-verbal test scores, out of 544 secondary school students, the mean score of 122 secondary school students from single child, 311 students having one sibling, 69 students having two siblings, 42 students having three to six siblings are 39.62, 40.47, 40.96 and 37.52 respectively. It means that the secondary school students having two siblings have more creativity in non-verbal test score than the other category secondary-level students. Further, the one-way ANOVA shows that ( $F=.479$ ,  $df= 3/540$  &  $p=.697$ ) the result is not significant. Hence, it indicates no significant differences in creativity in non-verbal test scores among secondary school students concerning their number of siblings.

The result regarding fluency in non-verbal test scores, out of 544 secondary school students, the mean score of 122 secondary school students from single child, 311 students having one sibling, 69 students having two siblings, 42 students having three to six siblings are 9.85, 10.37, 10.41 and 9.93 respectively. It means that the secondary-level students having two siblings have more fluency in non-verbal test score than the other category secondary-level students. Further, the one-way ANOVA shows that ( $F=.414$ ,  $df= 3/540$  &  $p=.743$ ) the result is not significant. Hence, it indicates no significant differences in fluency in non-verbal test scores among secondary school students concerning their number of siblings.

Regarding flexibility in non-verbal test scores, out of 544 secondary school students, the mean score of 122 secondary school students from single child, 311 students having one sibling, 69 students having two siblings, 42 students having three to six siblings are 6.53, 6.38, 6.68 and 6.79 respectively. It means that the secondary-level students having three to six siblings have more flexibility in non-verbal test score than the other category secondary-level students. Further, the one-way ANOVA shows that ( $F=.297$ ,  $df= 3/540$  &  $p=.827$ ) the result is not significant. Hence, it indicates no significant differences in

flexibility in non-verbal test scores among secondary school students concerning their number of siblings.

In the context of originality in non-verbal test scores, out of 544 secondary school students, the mean score of 122 secondary-level students from single child, 311 students having one sibling, 69 students having two siblings, 42 students having three to six siblings are 19.06, 19.45, 20.00 and 17.00 respectively. It means that the secondary school students having two siblings have more originality in non-verbal test score than the other category secondary-level students. Further, the one-way ANOVA shows that ( $F=.821$ ,  $df=3/540$  &  $p=.483$ ) the result is not significant. Hence, it indicates no significant differences in originality in non-verbal test scores among secondary school students concerning their number of siblings.

#### 5.2.8.6. Variations in Non- Verbal Creativity and Its Dimensions concerning Father`s Educational Qualifications

**Table No. 5.50. Father`s Educational Qualifications–wise Mean Comparison of Non-Verbal Creativity and its Dimensions.**

	<b>Father`s Educational Qualifications</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SEM</b>	<b>F</b>	<b>df</b>	<b>p</b>
<b>Creativity in Non-Verbal Test</b>	Elementary (Up to Class VIII)	139	38.62	15.731	1.334	1.147	2/541	.318
	Secondary and Higher Secondary (Class-IX to XII)	286	41.10	16.685	.987			
	Graduation and Above	119	39.49	17.498	1.604			
	Total	544	40.11	16.635	.713			
<b>Fluency in Non-Verbal</b>	Elementary (Up to Class	139	9.95	4.752	.403	1.497	2/541	.225

<b>Test</b>	VIII)							
	Secondary and Higher Secondary (Class-IX to XII)	286	10.56	4.836	.286			
	Graduation and Above	119	9.74	4.910	.450			
	Total	544	10.22	4.836	.207			
<b>Flexibility in Non-Verbal Test</b>	Elementary (Up to Class VIII)	139	6.52	3.511	.298	1.260	2/541	.284
	Secondary and Higher Secondary (Class-IX to XII)	286	6.64	3.283	.194			
	Graduation and Above	119	6.07	3.264	.299			
	Total	544	6.49	3.340	.143			
<b>Originality in Non-Verbal Test</b>	Elementary (Up to Class VIII)	139	17.98	9.932	.842	1.479	2/541	.229
	Secondary and Higher Secondary (Class-IX to XII)	286	19.83	10.542	.623			
	Graduation and Above	119	19.31	10.747	.985			
	Total	544	19.24	10.445	.448			

### **Interpretation**

The above table No. 5.50. reflects that in the creativity in non-verbal test scores, out of 544 secondary school students, the mean score of 139 secondary school students with elementary (up to class VIII) educational qualification of father's, 286 secondary-level students with secondary and higher secondary (class-IX to XII) educational qualification of father's, 119 secondary school students with graduation and above educational qualification of father's are 38.62, 41.10 and 39.49 respectively. It means that the secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of father's have more creativity in non-verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=1.147$ ,  $df= 2/541$  &  $p= .318$ ) the result is not significant. Hence, it indicates no significant differences in creativity in non-verbal test scores among secondary school students concerning their father's educational qualification.

Another result shows that in the case of fluency in non-verbal test scores, out of 544 secondary school students, the mean score of 139 secondary school students with elementary (up to class VIII) educational qualification of father's, 286 secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of father's, 119 secondary school students with graduation and above educational qualification of father's are 9.95, 10.56 and 9.74 respectively. It means that the secondary school students with secondary and higher secondary (class-IX to XII) educational qualifications of father's have more fluency in non-verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=1.497$ ,  $df= 2/541$  &  $p= .225$ ) the result is not significant. Hence, it indicates no significant differences in fluency in non-verbal test scores among secondary school students concerning their father's educational qualifications.

In the case of flexibility in non-verbal test scores, out of 544 secondary-level students, the mean score of 139 secondary school students with elementary (up to class VIII) educational qualification of father's, 286 secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of father's, 119 secondary school students with graduation and above educational qualification of father's are 6.52, 6.64 and 6.07 respectively. It means that the secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of father's have more flexibility in non-verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=1.260$ ,  $df= 2/541$  &  $p= .284$ ) the result is not significant. Hence, it indicates no significant differences in flexibility in non-verbal test

scores among secondary-level students concerning their father's educational qualification. In the context of originality in non-verbal test scores, out of 544 secondary school students, the mean score of 139 secondary school students with elementary (up to class VIII) educational qualification of father's, 286 secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of father's, 119 secondary school students with graduation and above educational qualification of father's are 17.98, 19.83 and 19.31 respectively. It means that the secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of father's have more originality in non-verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=1.479$ ,  $df= 2/541$  &  $p= .229$ ) the result is not significant. Hence, it indicates no significant differences in originality in non-verbal test scores among secondary school students concerning their father's educational qualification.

#### 5.2.8.7. Variations in Non- Verbal Creativity and Its Dimensions concerning Mother's Educational Qualifications

**Table No. 5.51. Mother's Educational Qualifications-wise Mean Comparison of Non-Verbal Creativity and its Dimensions.**

	<b>Mother's Educational Qualifications</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SEM</b>	<b>F</b>	<b>df</b>	<b>p</b>
<b>Creativity in Non-Verbal Test</b>	Elementary (Up to Class VIII)	155	38.70	16.003	1.285	2.427	2/541	.089
	Secondary and Higher Secondary (Class-IX to XII)	322	41.37	16.784	.935			
	Graduation and Above	67	37.33	16.994	2.076			
	Total	544	40.11	16.635	.713			
<b>Fluency</b>	Elementary	155	9.90	4.761	.382	3.345	2/541	<b>.036</b>

<b>in Non-Verbal Test</b>	(Up to Class VIII)							
	Secondary and Higher Secondary (Class-IX to XII)	322	10.62	4.878	.272			
	Graduation and Above	67	9.07	4.630	.566			
	Total	544	10.22	4.836	.207			
<b>Flexibility in Non-Verbal Test</b>	Elementary (Up to Class VIII)	155	6.71	3.798	.305	2.249	2/541	.107
	Secondary and Higher Secondary (Class-IX to XII)	322	6.54	3.042	.170			
	Graduation and Above	67	5.70	3.516	.430			
	Total	544	6.49	3.340	.143			
<b>Originality in Non-Verbal Test</b>	Elementary (Up to Class VIII)	155	17.83	10.097	.811	2.950	2/541	.053
	Secondary and Higher Secondary (Class-IX to XII)	322	20.14	10.504	.585			
	Graduation and Above	67	18.21	10.647	1.301			
	Total	544	19.24	10.445	.448			

**Table No. 5.51. (B) Mother`s Educational Qualification -wise Multiple Comparison of Non-Verbal Fluency**

<b>Dependent Variable</b>	<b>(I) Mother`s Educational Qualification</b>	<b>(J) Mother`s Educational Qualification</b>	<b>Mean Difference (I-J)</b>	<b>Std. Error</b>	<b>Sig.</b>
<b>Fluency in Non-Verbal Test</b>	Elementary (Up to Class VIII)	Secondary and Higher Secondary (Class-IX to XII)	-.721	.471	.126
		Graduation and Above	.822	.704	.243
	Secondary and Higher Secondary (Class-IX to XII)	Elementary (Up to Class VIII)	.721	.471	.126
		Graduation and Above	1.543*	.647	.017
	Graduation and Above	Elementary (Up to Class VIII)	-.822	.704	.243
		Secondary and Higher Secondary (Class-IX to XII)	-.1.543	.647	.017

**Interpretation**

The above Table No. 5.51. (A) reflects that in the context of creativity in non-verbal test scores, out of 544 secondary school students, the mean score of 155 secondary school students with elementary (up to class VIII) educational qualification of mother`s, 322 secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of mother`s, 67 secondary school students with graduation and above educational qualification of mother`s are 38.70, 41.37 and 37.33 respectively. It means that the secondary school students with secondary and higher secondary (class-IX

to XII) educational qualification of mother's have more creativity in non-verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=2.427$ ,  $df= 2/541$  &  $p= .089$ ) the result is not significant. Hence, it indicates no significant differences in creativity in non-verbal test scores among secondary school students concerning their mother's educational qualifications.

The result regarding fluency in non-verbal test scores, out of 544 secondary school students, the mean score of 155 secondary school students with elementary (up to class VIII) educational qualification of mother's, 322 secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of mother's, 67 secondary school students with graduation and above educational qualification of mother's are 9.90, 10.62, and 9.07 respectively. It means that the secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of mother's have more fluency in non-verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=3.345$ ,  $df= 2/541$  &  $p= .036$ ) the result is significant. Hence, it indicates significant differences in fluency in non-verbal test scores among secondary school students concerning their number of siblings. Further, the multiple comparisons [see Table No.5.51. (B)] on fluency in non-verbal test scores through LSD test showed that the actual differences lie between secondary and higher secondary (class-IX to XII) and graduation and above ( $p=.017<0.05$ ).

Regarding flexibility in non-verbal test scores, out of 544 secondary school students, the mean score of 155 secondary school students with elementary (up to class VIII) educational qualification of mother's, 322 secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of mother's, 67 secondary school students with graduation and above educational qualification of mother's are 6.71, 6.54 and 5.70 respectively. It means that the secondary school students with elementary (up to class VIII) educational qualification of mother's have more flexibility in non-verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=2.249$ ,  $df= 2/541$  &  $p= .107$ ) the result is not significant. Hence, it indicates no significant differences in flexibility in non-verbal test scores among secondary school students concerning their mother's educational qualification.

In the context of originality in non-verbal test scores, out of 544 secondary school students, the mean score of 155 secondary school students with elementary (up to class VIII) educational qualification of mother's, 322 secondary school students with secondary and higher secondary (class-IX to XII) educational qualification of mother's, 67 secondary school students with graduation and above educational qualifications of

mother's are 17.83, 20.14 and 18.21 respectively. It means that the secondary school students with secondary and higher secondary (class-IX to XII) educational qualifications of mother's have more originality in non-verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=2.950$ ,  $df= 2/541$  &  $p= .053$ ) the result is not significant. Hence, it indicates no significant differences in originality in non-verbal test scores among secondary school students concerning their mother's educational qualifications.

**5.2.8.8. Variations of Family Monthly Income on Non-Verbal Creativity and Its Dimensions.**

**Table No. 5.52. (A) Family Monthly Income -wise Mean Comparison of Non-Verbal Creativity and its Dimensions.**

	<b>Family Monthly Income</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SEM</b>	<b>F</b>	<b>df</b>	<b>P</b>
<b>Creativity in Non-Verbal Test</b>	Up to 6,174	179	41.01	14.360	1.073	2.9	4/53	<b>.020</b>
	6,175 - 18,496	180	41.36	17.395	1.297	44	9	
	18,497 - 30,830	76	41.95	17.444	2.001			
	30,831 - 46,128	40	35.75	16.049	2.538			
	More than 46,189	69	35.04	18.516	2.229			
	Total	544	40.11	16.635	.713			
<b>Fluency in Non-Verbal Test</b>	Up to 6,174	179	10.54	4.578	.342	3.8	4/53	<b>.004</b>
	6,175 - 18,496	180	10.52	4.749	.354	46	9	
	18,497 - 30,830	76	11.01	5.035	.578			
	30,831 - 46,128	40	8.80	4.805	.760			
	More than 46,189	69	8.57	5.112	.615			
	Total	544	10.22	4.836	.207			
<b>Flexibility in Non-Verbal Test</b>	Up to 6,174	179	6.82	2.845	.213	3.8	4/53	<b>.004</b>
	6,175 - 18,496	180	6.84	4.103	.306	94	9	
	18,497 - 30,830	76	6.32	2.536	.291			
	30,831 - 46,128	40	5.85	3.332	.527			
	More than 46,189	69	5.23	2.761	.332			
	Total	544	6.49	3.340	.143			
<b>Originality in Non-Verbal Test</b>	Up to 6,174	179	19.48	9.352	.699	2.2	4/53	<b>.061</b>
	6,175 - 18,496	180	19.91	10.941	.816	68	9	
	18,497 - 30,830	76	20.78	10.599	1.216			
	30,831 - 46,128	40	16.73	10.163	1.607			
	More than 46,189	69	16.67	11.381	1.370			
	Total	544	19.24	10.445	.448			

**Table No. 5.52. (B) Family Monthly Income -wise Multiple Comparison of Non-Verbal Creativity and its Dimensions**

<b>Dependent Variable</b>	<b>(I) Family Monthly Income</b>	<b>(J) Family Monthly Income</b>	<b>Mean Difference (I-J)</b>	<b>Std. Error</b>	<b>Sig.</b>
<b>Creativity in Non-Verbal Test</b>	Up to 6,174	6,175 - 18,496	-.344	1.743	.843
		18,497 - 30,830	-.936	2.261	.679
		30,831 - 46,128	5.261	2.889	.069
		More than 46,189	5.968*	2.341	.011
	6,175 - 18,496	Up to 6,174	.344	1.743	.843
		18,497 - 30,830	-.592	2.259	.793
		30,831 - 46,128	5.606	2.887	.053
		More than 46,189	6.312*	2.339	.007
	18,497 - 30,830	Up to 6,174	.936	2.261	.679
		6,175 - 18,496	.592	2.259	.793
		30,831 - 46,128	6.197	3.226	.055
		More than 46,189	6.904*	2.747	.012
	30,831 - 46,128	Up to 6,174	-5.261	2.889	.069
		6,175 - 18,496	-5.606	2.887	.053
		18,497 - 30,830	-6.197	3.226	.055
		More than 46,189	.707	3.282	.830
	More than 46,189	Up to 6,174	-5.968*	2.341	.011
		6,175 - 18,496	-6.312*	2.339	.007
		18,497 - 30,830	-6.904*	2.747	.012
		30,831 - 46,128	-.707	3.282	.830
<b>Fluency in Non-Verbal</b>	Up to 6,174	6,175 - 18,496	.020	.505	.969
		18,497 - 30,830	-.471	.655	.472

<b>Test</b>		30,831 - 46,128	1.742*	.837	.038	
		More than 46,189	1.977*	.678	.004	
	6,175 - 18,496	Up to 6,174	-.020	.505	.969	
		18,497 - 30,830	-.491	.655	.454	
		30,831 - 46,128	1.722*	.837	.040	
		More than 46,189	1.957*	.678	.004	
	18,497 - 30,830	Up to 6,174	.471	.655	.472	
		6,175 - 18,496	.491	.655	.454	
		30,831 - 46,128	2.213*	.935	.018	
		More than 46,189	2.448*	.796	.002	
	30,831 - 46,128	Up to 6,174	-1.742*	.837	.038	
		6,175 - 18,496	-1.722*	.837	.040	
		18,497 - 30,830	-2.213*	.935	.018	
		More than 46,189	.235	.951	.805	
	More than 46,189	Up to 6,174	-1.977*	.678	.004	
		6,175 - 18,496	-1.957*	.678	.004	
		18,497 - 30,830	-2.448*	.796	.002	
		30,831 - 46,128	-.235	.951	.805	
	<b>Flexibility in Non-Verbal Test</b>	Up to 6,174	6,175 - 18,496	-.023	.349	.947
			18,497 - 30,830	.505	.452	.264
30,831 - 46,128			.971	.578	.093	
More than 46,189			1.589*	.468	.001	
6,175 - 18,496		Up to 6,174	.023	.349	.947	
		18,497 - 30,830	.529	.452	.243	
		30,831 - 46,128	.994	.578	.086	
		More than 46,189	1.613*	.468	.001	
18,497 -		Up to 6,174	-.505	.452	.264	

	30,830	6,175 - 18,496	-.529	.452	.243
		30,831 - 46,128	.466	.646	.471
		More than 46,189	1.084*	.550	.049
	30,831 - 46,128	Up to 6,174	-.971	.578	.093
		6,175 - 18,496	-.994	.578	.086
		18,497 - 30,830	-.466	.646	.471
		More than 46,189	.618	.657	.347
	More than 46,189	Up to 6,174	-1.589*	.468	.001
		6,175 - 18,496	-1.613*	.468	.001
		18,497 - 30,830	-1.084*	.550	.049
		30,831 - 46,128	-.618	.657	.347

#### Interpretation

The above Table No. 5.52. (A) reflects that in the context of creativity in non-verbal test scores, out of 544 secondary school students, the mean score of 179 secondary school students with up to 6,174 familial monthly income, 180 secondary school students with 6,175 - 18,496 familial monthly income, 76 secondary school students with 18,497 - 30,830 familial monthly income, 40 secondary school students with 30,831 - 46,128 familial monthly income, 69 secondary school students with More than 46,189 familial monthly income are 41.01, 41.36, 41.95, 35.75 and 35.04 respectively. It means that the secondary-level students with 18,497 - 30,830 familial monthly income have more creativity in non-verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=2.944$ ,  $df= 4/539$  &  $p= .020$ ) the result is significant. Hence, it indicates significant differences in creativity in non-verbal test scores among secondary school students concerning their monthly family income. Further, the multiple comparisons [see Table No. 5.52. (B)] on creativity in non-verbal test scores through LSD test showed that the actual differences lie between up to 6,174 and more than 46,189 ( $p=.011<0.05$ ), 6,175 - 18,496 and more than 46,189 ( $p=.007<0.05$ ), and 18,497 - 30,830 and more than 46,189 ( $p=.012<0.05$ ).

The result regarding fluency in non-verbal test scores, out of 544 secondary school students, the mean score of 179 secondary school students with up to 6,174 familial monthly income, 180 secondary school students with 6,175 - 18,496 familial monthly income, 76 secondary school students with 18,497 - 30,830 familial monthly income, 40

secondary school students with 30,831 - 46,128 familial monthly income, 69 secondary school students with More than 46,189 familial monthly income are 10.54, 10.52, 11.01, 8.80 and 8.57 respectively. It means that the secondary school students with 18,497 - 30,830 familial monthly income have more fluency in non-verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=3.846$ ,  $df= 4/539$  &  $p= .004$ ) the result is significant. Hence, it indicates significant differences in fluency in non-verbal test scores among secondary school students concerning their monthly family income. Further, the multiple comparisons [see Table No. 5.52. (B)] on fluency in non-verbal test scores through LSD test showed that the actual differences lie between up to 6,174 and 30,831 - 46,128 ( $p=.038<0.05$ ), Up to 6,174 and more than 46,189 ( $p=.004<0.05$ ), and 6,175 - 18,496 and 30,831 - 46,128 ( $p=.040<0.05$ ), 6,175 - 18,496 and More than 46,189 ( $p=.004<0.05$ ), 18,497 - 30,830 and 30,831 - 46,128 ( $p=.018<0.05$ ), and 18,497 - 30,830 and More than 46,189 ( $p=.002<0.05$ ).

Regarding flexibility in non-verbal test scores, out of 544 secondary school students, the mean score of 179 secondary school students with up to 6,174 familial monthly income, 180 secondary school students with 6,175 - 18,496 familial monthly income, 76 secondary school students with 18,497 - 30,830 familial monthly income, 40 secondary school students with 30,831 - 46,128 familial monthly income, 69 secondary school students with More than 46,189 familial monthly income are 6.82, 6.84, 6.32, 5.85 and 5.23 respectively. It means that the secondary school students with 6,175 - 18,496 familial monthly income have more flexibility in non-verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=3.894$ ,  $df= 4/539$  &  $p= .004$ ) the result is significant. Hence, it indicates significant differences in flexibility in non-verbal test scores among secondary school students concerning their monthly family income. Further, the multiple comparisons [see Table No.5.52. (B)] on flexibility in non-verbal test scores through LSD test showed that the actual differences lie between up to 6,174 and more than 46,189( $p=.001<0.05$ ), and 6,175 - 18,496 and more than 46,189 ( $p=.001<0.05$ ), 18,497 - 30,830 and more than 46,189 ( $p=.049<0.05$ ).

In the context of originality in non-verbal test scores, out of 544 secondary school students, the mean score of 179 secondary school students with up to 6,174 familial monthly income, 180 secondary school students with 6,175 - 18,496 familial monthly income, 76 secondary school students with 18,497 - 30,830 familial monthly income, 40 secondary school students with 30,831 - 46,128 familial monthly income, 69 secondary school students with More than 46,189 familial monthly income are 19.48, 19.91, 20.78, 16.73 and 16.67 respectively. It means that the secondary school students with 18,497 -

30,830 familial monthly income have more originality in non-verbal test score than the other category secondary school students. Further, the one-way ANOVA shows that ( $F=2.268$ ,  $df= 4/539$  &  $p= .061$ ) the result is not significant. Hence, it indicates no significant differences in originality in non-verbal test scores among secondary school students concerning their monthly family income.

### 5.2.9. Association between SS, FS (PI and PSu) and Creativity among Secondary School Students

**Ho7:** *There are no significant associations between school support, family support (PI and PSu) and creativity among secondary school students in WB.*

#### 5.2.9.1. Association between SS, FS (PI and PSu) and Creativity.

**Table No. 5.53. Correlation between SS, FS (PI and PSu) and creativity.**

		PI	Psu	Creativity
SS	Pearson Correlation	.125	.096	.102
	Sig. (2-tailed)	.004**	.025**	.017**
	N	544	544	544
PI	Pearson Correlation		.142	.119
	Sig. (2-tailed)		.001**	.005**
	N		544	544
Psu	Pearson Correlation			.126
	Sig. (2-tailed)			.003**
	N			544
**Correlation is Significant at the 0.05 level (2 tailed)				

#### Interpretation

Table no. 5.53. Shows the SS, FS (PI and PSu), and creativity among secondary students. The results show a very low positive and significant relationship between PI and SS (i.e.,  $r= .125$ ,  $p=.004$ ). A Very low positive and significant relationship was found between SS and PSu (i.e.,  $r=.096$ ,  $p=.025$ ). Whereas, a very low positive and significant relationship was found between SS and Creativity (i.e.,  $r=.102$ ,  $p=.017$ ).

The above table shows a very low positive and significant relationship between PI and PSu (i.e.,  $r=.142$ ,  $p=.001$ ). A very low positive and significant relationship was found between PI and Creativity (i.e.,  $r=.119$ ,  $p= .005$ ).

The table shows a very low positive and significant relationship between PSu and Creativity (i.e.,  $r=.126$ ,  $p=.003$ ).

### 5.2.10. Effects and Potential Predictiveness

**Ho8:** *There is no significant effect and predictive potential of SS in explaining the variations in overall and dimension-wise creativity (fluency, flexibility and originality) among the secondary school students in WB*

#### 5.2.10.1. Effects and Potential Predictiveness of SS is Explaining the Variance in Creativity among the Secondary School students

**Table No 5.54. Effect and Potential Predictiveness of SS on Creativity**

Model Summary					
Model	R	R Square	Adjusted R2	SE of Estimate	
1	.102 <sup>a</sup>	.010	.009	44.264	
ANOVA					
Model	Sum Square	df	Mean Square	F	Sig.
Regression	11181.424	1	11181.424	5.707	.017 <sup>b</sup>
Residual	1061954.194	542	1959.325		
Total	1073135.618	543			
a. Dependent Variable: Creativity, b. Predictors: (Constant), SS S					
Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	107.288	9.825		10.920	.000
SS	.393	.165	.102	2.389	.017

#### Interpretation

Table No. 5.54. represents the results of regression analysis where creativity is the dependent variable, and SS is the predictor (Independent variable). The model summary shows the multiple correlation between SS and creativity is .102 (R), indicating a very low relationship between SS and creativity. The R square (.010) and the Adjusted R<sup>2</sup> (.009) show that about 1% of the variations in creativity are accounted by the SS. Further,

the ANOVA results confirm that this model is significant ( $F=5.707, p=.017$ ), which means the SS is a significant predictor of creativity. Further, the coefficients show that the SS is a significant positive predictor of creativity ( $\beta=0.102, t=2.389, p=.017$ ).

### 5.2.10.2. Effects and Potential Predictiveness of SS on Explaining the Variance in Fluency among Secondary School Students

**Table No. 5.55. Effect and Potential Predictiveness of SS on Fluency**

Model Summary					
Model	R	R Square	Adjusted R2	SE of Estimate	
1	.088 <sup>a</sup>	.008	.006	24.290	
ANOVA					
Model	Sum Square	df	Mean Square	F	Sig.
Regression	2508.102	1	2508.102	4.251	.040 <sup>b</sup>
Residual	319781.714	542	590.003		
Total	322289.816	543			
a. Dependent Variable: Fluency, b. Predictors: (Constant), SS Score.					
Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	51.075	5.391		9.473	.000
SS	.186	.090	.088	2.062	.040

#### Interpretation

Table No. 5.55. represents linear regression analysis result where fluency is the dependent variable and SS is the predictor (Independent variable). The model summary indicates a multiple correlation ( $R=.088$ ) between SS and fluency, suggesting a very low relationship. The  $R^2$  value is .008, which means SS explains only .8% of the variations in fluency. The ANOVA results confirm that this model is significant at 0.05 ( $F=4.251, p=.040$ ), indicating that SS is a significant predictor of fluency.

Further, the coefficient is also significant ( $\beta=.008, t=2.062, p=.040$ ), suggesting that SS is positive significant predictor of fluency.

### 5.2.10.3. Effects and Potential Predictiveness of SS on Explaining the Variance in Flexibility among Secondary School Students

**Table No. 5.56. Effect and Potential Predictiveness of SS on Flexibility**

Model Summary						
Model	R	R Square	Adjusted R2	SE of Estimate		
.127 <sup>a</sup>	.016	.014	5.787	.127 <sup>a</sup>		
ANOVA						
Model	Sum Square	df	Mean Square	F	Sig.	
Regression	297.702	1	297.702	8.890	.003 <sup>b</sup>	
Residual	18149.502	542	33.486			
Total	18447.204	543				
a. Dependent Variable: Flexibility, b. Predictors: (Constant), SS						
Coefficients						
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
(Constant)	11.814	1.284		9.198	.000	
SS	.064	.022	.127	2.982	.003	

#### Interpretation

Table No. 5.56. represents the results of linear regression analysis, where flexibility is the dependent variable, and SS is the predictor (Independent variable). The model summary shows a very low positive multiple correlation ( $R=.016$ ) between SS and flexibility. The  $R^2$  value is .014, which means SS explains only 1.4% of the variations in flexibility. The ANOVA results confirm that this model is significant at 0.05 ( $F=8.890$ ,  $p=.003$ ), indicating that SS is a significant predictor of flexibility.

Further, the coefficient is also significant ( $\beta=.127$ ,  $t=2.982$ ,  $p=.003$ ), suggesting SS is a significant positive predictor of flexibility.

#### 5.2.10.4. Effects and Potential Predictiveness of SS on Explaining the Variance in Originality among the Secondary School Students

**Table No. 5.57. Effect and Potential Predictiveness of SS on Originality**

Model Summary					
Model	R	R Square	Adjusted R2	SE of Estimate	
1	.097 <sup>a</sup>	.009	.008	16.863	
ANOVA					
Model	Sum Square	df	Mean Square	F	Sig.
Regression	1477.474	1	1477.474	5.196	.023 <sup>b</sup>
Residual	154131.467	542	284.375		
Total	155608.941	543			
a. Dependent Variable: Originality, b. Predictors: (Constant), SS					
Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	31.923	3.743		8.529	.000
SS	.143	.063	.097	2.279	.023

#### Interpretation

Table No. 5.57. Shows the results of linear regression analysis, where originality is the dependent variable, and SS is the predictor (Independent variable). The model summary shows a very low positive multiple correlation between SS and Originality (R=.097). The R2 value is .009, which means SS explains only 0.9% of the variations in originality. The ANOVA results confirm that this model is significant at 0.05 (F=5.196,  $p=.023$ ), indicating that SS is a significant predictor of originality.

Further, the coefficient is also significant ( $\beta=.097$ ,  $t=2.279$ ,  $p=.023$ ), suggesting that SS is a significant positive predictor of originality.

### 5.2.10.5. Effects and Potential Predictiveness of SS on Explaining the Variance in Verbal Creativity among the Secondary School Students

**Table No. 5.58. Effect and Potential Predictiveness of SS on Verbal Creativity**

Model Summary					
Model	R	R Square	Adjusted R2	SE of Estimate	
1	.100 <sup>a</sup>	.010	.008	36.547	
ANOVA					
Model	Sum Square	df	Mean Square	F	Sig.
Regression	7292.666	1	7292.666	5.460	.020 <sup>b</sup>
Residual	723923.686	542	1335.653		
Total	731216.351	543			
a. Dependent Variable: Verbal Creativity, b. Predictors: (Constant), SS					
Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	71.606	8.112		8.827	.000
SS	.318	.136	.100	2.337	.020

#### Interpretation

Table No. 5.58. shows linear regression analysis result, where verbal creativity is the dependent variable, and SS is the predictor (Independent variable). The model summary indicates a very low positive multiple correlation between SS and verbal creativity ( $R=.100$ ). The  $R^2$  value is .010, which means SS explains only 1% of the variations in Verbal Creativity. The ANOVA results confirm that this model is significant at 0.05 ( $F=5.460, p=.020$ ), suggesting that SS is significant predictor of verbal creativity.

Further, the coefficient is also significant ( $\beta=.100, t=2.337, p=.020$ ), indicating that SS is a significant positive predictor of Verbal Creativity.

### 5.2.10.6. Effects and Potential Predictiveness of SS on Explaining the Variance in Non-Verbal Creativity among the Secondary School Students

**Table No. 5.59. Effect and Potential Predictiveness of SS on Non-Verbal Creativity**

Model Summary						
Model	R	R Square	Adjusted R2	SE of Estimate		
1	.052 <sup>a</sup>	.003	.001	16.627		
ANOVA						
Model	Sum Square	df	Mean Square	F	Sig.	
Regression	413.925	1	413.925	1.497	.222 <sup>b</sup>	
Residual	149846.235	542	276.469			
Total	150260.160	543				
a. Dependent Variable: Non-Verbal Creativity, b. Predictors: (Constant), SS						
Coefficients						
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
(Constant)	35.681	3.691	.052	9.668	.000	
SS	.076	.062		1.224	.222	

#### Interpretation

Table No. 5.59. Shows linear regression analysis result, where non-verbal creativity is the dependent variable and SS is the predictor (Independent variable). The model summary indicates a low positive multiple correlation between SS and non-verbal creativity ( $R=.052$ ). The  $R^2$  value is .003, which means SS explains only .3% of the variations in non-verbal Test of Creativity. The ANOVA results confirm that this model is not significant at 0.05 ( $F=1.497$ ,  $p=.222$ ), indicating SS is not a significant predictor of non-verbal creativity. Further, the coefficient of non-verbal creativity and SS is not significant ( $\beta=.052$ ,  $t=1.224$ ,  $p=.222$ ).

### 5.2.11. Effects and Potential Predictiveness

**H<sub>09</sub>:** *There is no significant effect and predictive potential of FS (PI and PSu) in explaining the variations in overall and dimension-wise creativity among the secondary school students in WB.*

#### 5.2.11.1. Effects and Potential Predictiveness of FS (PI and PSu) on Explaining the

## Variance in Creativity among the Secondary School Students`

**Table No 5.60. Effect and Potential Predictiveness of FS (PI and PSu) on Creativity**

Model Summary					
Model	R	R Square	Adjusted R2	SE of Estimate	
1	.162 <sup>a</sup>	.026	.023	43.947	
ANOVA					
Model	Sum Square	df	Mean Square	F	Sig.
Regression	28264.471	2	14132.236	7.317	.001 <sup>b</sup>
Residual	1044871.147	541	1931.370		
Total	1073135.618	543			
a. Dependent Variable: Creativity, b. Predictors: (Constant), PSu and PI					
Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	47.226	22.440		2.105	.036
PI	2.032	.842	.103	2.413	.016
PSu	1.227	.473	.111	2.595	.010

### Interpretation

Table No. 5.60. represents the results of regression analysis, where creativity is the dependent variable and PSu and PI are the predictors. The model summary shows the multiple correlation between PSu and PI, and creativity is .162 (R). The R Square and the Adjusted R2 tell that about 2.6% of the variations in creativity are combinedly accounted by PI and PSu (R Square=.026, Adjusted R<sup>2</sup>=.023). Further, the ANOVA results also confirm that this model is significant (F=7.317,  $p=.001$ ) which means PSu and PI are the significant predictors of creativity.

Further, the coefficients show that among the predictors, PSu is strongest positive significant predictor of creativity ( $\beta=0.111$ ,  $t=2.595$ ,  $p=.010$ ) than PI ( $\beta=0.103$ ,  $t=2.413$ ,  $p=.016$ ).

### 5.2.11.2. Effects and Potential Predictiveness of FS (PI and PSu) on Explaining the Variance in Fluency among the Secondary School Students

**Table No. 5.61. Effect and Potential Predictiveness of FS (PI and PSu) on Fluency**

Model Summary					
Model	R	R Square	Adjusted R2	SE of Estimate	
1	.118 <sup>a</sup>	.014	.010	24.237	
ANOVA					
Model	Sum Square	df	Mean Square	F	Sig.
Regression	4491.982	2	2245.991	3.823	.022 <sup>b</sup>
Residual	317797.834	541	587.427		
Total	322289.816	543			
a. Dependent Variable: Fluency, b. Predictors: (Constant), PSu and PI.					
Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	29.366	12.376		2.373	.018
PI	.753	.464	.070	1.620	.106
PSu	.518	.261	.086	1.987	.047

#### Interpretation

Table No. 5.61. represents the results of our regression analysis, where Fluency is the dependent variable and PSu and PI are the predictors (Independent variables). The model summary shows the multiple correlation between PSu and PI, and Fluency is .118 (R). The R Square and the Adjusted R2 (R Square=.014, Adjusted R<sup>2</sup>=.010) show that PSu and PI combinedly explain 1.4% variation in Fluency. Further, the ANOVA results also confirm that this model is statistically significant (F=3.823,  $p=.022$ ), which means PSu and PI are the significant predictors of Fluency.

Further, the coefficients table reveals the individual impact of each predictor on originality. PSu is the strongest, positive significant predictor of Fluency ( $\beta=0.086$ ,  $t=1.987$ ,  $p=.047$ ) and PI does not significantly predict fluency ( $\beta=0.070$ ,  $t=1.620$ ,  $p=.106$ ).

### 5.2.11.3. Effects and Potential Predictiveness of FS (PI and PSu) on Explaining the Variance in Flexibility among the Secondary School Students

**Table No. 5.62. Effect and Potential Predictiveness of FS (PI and PSu) on Flexibility**

Model Summary					
Model	R	R Square	Adjusted R2	SE of Estimate	
1	.313 <sup>a</sup>	.098	.095	5.545	
ANOVA					
Model	Sum Square	df	Mean Square	F	Sig.
Regression	1811.185	2	905.592	29.450	.000 <sup>b</sup>
Residual	16636.019	541	30.750		
Total	18447.204	543			
a. Dependent Variable: Flexibility, b. Predictors: (Constant), PSu and PI.					
Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-5.730	2.832		-2.024	.043
PI	.551	.106	.214	5.185	.000
PSu	.290	.060	.201	4.861	.000

#### Interpretation

Table No. 5.62 represents the results of our regression analysis, where Flexibility is the dependent variable and PSu and PI are the predictors (Independent variables). The model summary shows the multiple correlation between PSu and PI, and Flexibility is .313 (R). The R Square and the Adjusted R2 (R Square=.098, Adjusted R<sup>2</sup>=.095) indicate that PSu and PI combinedly account for 9.8% variation in Flexibility. Further, the ANOVA results also confirm that this model is significant (F=29.450,  $p=.000$ ), which means PSu and PI are the significant predictors of Flexibility.

Further, the coefficients show that among the predictors, PI is the strongest, positively significant predictor of Flexibility ( $\beta=0.214$ ,  $t=5.185$ ,  $p=.000$ ) than PSu ( $\beta=0.201$ ,  $t=4.861$ ,  $p=.000$ ).

#### 5.2.11.4. Effects and Potential Predictiveness of FS (PI and PSu) on Explaining the Variance in Originality among the Secondary School Students

**Table No. 5.63. Effect and Potential Predictiveness of FS (PI and PSu) on Originality**

Model Summary					
Model	R	R Square	Adjusted R2	SE of Estimate	
1	.119 <sup>a</sup>	.014	.011	16.839	
ANOVA					
Model	Sum Square	df	Mean Square	F	Sig.
Regression	2206.308	2	1103.154	3.890	.021 <sup>b</sup>
Residual	153402.633	541	283.554		
Total	155608.941	543			
a. Dependent Variable: Originality, b. Predictors: (Constant),PSu and PI.					
Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	16.871	8.598	.080	1.962	.050
PI	.595	.323		1.844	.066
PSu	.328	.181	.078	1.809	.071

#### Interpretation

Table No. 5.63. represents the results of regression analysis, where Originality is the dependent variable and PSu and PI are the predictors (Independent variables). The model summary shows the multiple correlation between PSu and PI, and Originality is .119 (R). The R Square and the Adjusted R2 (R Square=.014, Adjusted R2=.011) indicate that PSu and PI combinedly explain 1.4% of variation in Originality. Further, the ANOVA results also confirm that this model is significant (F=3.890,  $p=.021$ ), which means PSu and PI are the significant predictors of Originality.

Further, the coefficients also reveal that among the predictors, the association of PI with originality is not significant ( $\beta=0.080$ ,  $t=1.844$ ,  $p=.066$ ), and association of PSu with verbal originality is not significant ( $\beta=0.078$ ,  $t=1.809$ ,  $p=.071$ ).

**5.2.11.5. Effects and Potential Predictiveness of FS (PI and PSu) on Explaining the Variance in Verbal Creativity among the Secondary School Students**

**Table No. 5.64. Effect and Potential Predictiveness of FS (PI and PSu) on Verbal Creativity**

Model Summary					
Model	R	R Square	Adjusted R2	SE of Estimate	
1	.161 <sup>a</sup>	.026	.022	36.284	
ANOVA					
Model	Sum Square	df	Mean Square	F	Sig.
Regression	18981.389	2	9490.694	7.209	.001 <sup>b</sup>
Residual	712234.962	541	1316.516		
Total	731216.351	543			
a. Dependent Variable: Verbal Creativity, b. Predictors: (Constant), PSu and PI.					
Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	25.516	18.527		1.377	.169
PI	1.327	.695	.082	1.909	.057
PSu	1.162	.390	.128	2.977	.003

**Interpretation**

Table No. 5.64. represents the results of regression analysis, where verbal creativity is the dependent variable, and PSu, and PI are the predictors (Independent variable). The model summary shows the multiple correlation between PI and PSu, and verbal creativity is .161(R). The R Square (.026) and Adjusted R<sup>2</sup> (.022) show that about 2.6% of the variation in verbal creativity is combinedly explained by PI and PSu. Further, the ANOVA results also confirm that this model is significant (F=7.209, p=.001). This means PI and PSu are the significant predictors of verbal creativity.

Further, the coefficients also reveal that among the predictors, the association of PI with creativity in verbal test is not significant (B=.082, t=1.909, p=.057), and association of PSu with verbal creativity is significant (B=.128, t=2.977, p=.003).

**5.2.11.6. Effects and Potential Predictiveness of FS (PI and PSu) on Explaining the Variance in Non-Verbal Creativity among the Secondary School Students**

**Table No. 5.65. Effect and Potential Predictiveness of Family Support (PI and PSu) on Non-Verbal Creativity**

Model Summary					
Model	R	R Square	Adjusted R2	SE of Estimate	
1	.099 <sup>a</sup>	.010	.006	16.583	
ANOVA					
Model	Sum Square	df	Mean Square	F	Sig.
Regression	1480.217	2	740.108	2.691	.069
Residual	148779.943	541	275.009		
Total	150260.160	543			
a. Dependent Variable: Non-Verbal Creativity, b. Predictors: (Constant), PSu and PI.					
Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	21.710	8.468		2.564	.011
<b>PI</b>	.704	.318	.096	2.216	.027
<b>PSu</b>	.065	.178	.016	.364	.716

**Interpretation**

Table No. 5.65. represents the results of regression analysis, where non-verbal creativity is the dependent variable, and PSu, PI are the predictors (Independent variable). The model summary shows the multiple correlations among PI, PSu and creativity in verbal test is .099 (R). The R Square (.010) and Adjusted R<sup>2</sup> (.006) tells that about 1% variation in non-verbal creativity is combinedly accounted by PI and PSu. Further, the ANOVA results also confirm that this model is not significant (F=2.691, p=.069), which means PI and PSu are not significant predictors of non-verbal creativity.

Further, the coefficients also reveal that among the predictors, the association of PI with creativity in non-verbal test is significant (B=.096, t=2.216, p=.027) and association of PSu with creativity in non-verbal test is not significant (B=.016, t=.364, p=.716).

## 5.2.12 Effects and Predictiveness

*H<sub>0</sub>10: There is no significant combined effect and predictive potential of SS and FS (PI and PSu) in explaining the variations in overall and dimension-wise creativity (fluency, flexibility and originality) among the secondary school students in WB.*

### 5.2.12.1. Combine Effects and Potential Predictiveness of SS and FS (PI and PSu) on Explaining the Variance in Creativity among the Secondary School Students

**Table No. 5.66. Combine Effect and Potential Predictiveness of SS and FS (PI and PSu) on Creativity**

Model Summary					
Model	R	R Square	Adjusted R2	SE of Estimate	
1	.181 <sup>a</sup>	.033	.027	43.846	
ANOVA					
Model	Sum Square	df	Mean Square	F	Sig.
Regression	35017.012	3	11672.337	6.072	.000 <sup>b</sup>
Residual	1038118.606	540	1922.442		
Total	1073135.618	543			
a. Dependent Variable: Creativity, b. Predictors: (Constant), SS, PSu and PI.					
Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	35.374	23.264		1.521	.129
PI	1.853	.846	.094	2.191	.029
PSu	1.156	.473	.105	2.443	.015
SS	.309	.165	.080	1.874	.061

### Interpretation

Table No. 5.66. represents the results of regression analysis, where creativity is the dependent variable, and SS score, PSu, and PI are the predictors (Independent variable).

The model summary shows the multiple correlation among SS score, PI and PSu, and creativity is .181(R). The R Square (.033) and Adjusted R<sup>2</sup> (.027) tells that about 3.3% variation in creativity explains by SS score, PSu, and PI. Further, the ANOVA results also confirm that this model is significant (F=6.072,  $p=.000$ ). Which means SS score, PI and PSu is the significant predictor of creativity.

Further, the coefficients also reveal that among the predictors, the association between parental involvement and creativity is significant (B=.094,  $t=2.191$ ,  $p=.029$ ), association between PSu and creativity is significant (B=.105,  $t=2.443$ ,  $p=.015$ ), and association between SS score and creativity is not significant (B=.080,  $t=1.874$ ,  $p=.061$ ).

### 5.2.12.2. Combine Effects and Potential Predictiveness of SS and FS (PI and PSu) on Explaining the Variance in Fluency among the Secondary School Students

**Table No. 5.67. Combine Effect and Potential Predictiveness of SS and FS (PI and PSu) on Fluency**

Model Summary					
Model	R	R Square	Adjusted R2	SE of Estimate	
1	.138 <sup>a</sup>	.019	.014	24.195	
ANOVA					
Model	Sum Square	df	Mean Square	F	Sig.
Regression	6163.947	3	2054.649	3.510	.015 <sup>b</sup>
Residual	316125.869	540	585.418		
Total	322289.816	543			
a. Dependent Variable: Fluency, b. Predictors: (Constant), SS, PSu and PI.					
Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	23.469	12.838		1.828	.068
PI	.664	.467	.062	1.422	.156
PSu	.483	.261	.080	1.849	.065
SS	.154	.091	.073	1.690	.092

## Interpretation

Table No. 5.67. represents the results of regression analysis, where fluency is the dependent variable, and SS score, PSu, and PI are the predictors (Independent variable). The model summary shows the multiple correlation among SS score, PI and PSu, and fluency is .138 (R). The R Square (.019) and Adjusted R<sup>2</sup> (.014) tells that SS score, PSu, and PI explains 1.9% variation in fluency. Further, the ANOVA results also confirm that this model is significant (F=3.510,  $p=.015$ ). Which means SS score, PI and PSu is the significant predictor of fluency.

Further, the coefficients also reveal that among the predictors, the association between PI and fluency is not significant (B=.062,  $t=1.422$ ,  $p=.156$ ), association between PSu and fluency is not significant (B=.080,  $t=1.849$ ,  $p=.065$ ), and association between SS score and fluency is also not significant (B=.073,  $t=1.690$ ,  $p=.092$ ).

### 5.2.12.3. Combine Effects and Potential Predictiveness of SS and FS (PI and PSu) on Explaining the Variance in Flexibility among the Secondary School Students

**Table No 5.68. Combine Effect and Potential Predictiveness of SS and FS (PI and PSu) on Flexibility**

Model Summary					
Model	R	R Square	Adjusted R2	SE of Estimate	
1	.324 <sup>a</sup>	.105	.100	5.530	
ANOVA					
Model	Sum Square	df	Mean Square	F	Sig.
Regression	1934.967	3	644.989	21.093	.000 <sup>b</sup>
Residual	16512.237	540	30.578		
Total	18447.204	543			
a. Dependent Variable: Flexibility, b. Predictors: (Constant), SS, PSu and PI.					
Coefficients					
Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	

	B	Std. Error	Beta		
(Constant)	-7.335	2.934		-2.500	.013
PI	.527	.107	.205	4.940	.000
PSu	.280	.060	.194	4.699	.000
SS	.042	.021	.083	2.012	.045

### Interpretation

Table No. 5.68. represents the results of regression analysis, where flexibility is the dependent variable, and SS score, PSu, and PI are the predictors (Independent variable). The model summary shows the multiple correlation among SS score, PI and PSu, and flexibility is .324 (R). The R Square (.105) and Adjusted R<sup>2</sup> (.100) tells that SS score, PSu, and PI explain 10.5% variation in flexibility. Further, the ANOVA results also confirm that this model is significant (F=21.093,  $p=.000$ ). Which means SS, PI and PSu is the significant predictor of flexibility.

Further, the coefficients also reveal that among the predictors, the association between PI and flexibility is significant (B=.205,  $t=4.940$ ,  $p=.000$ ), association between PSu and flexibility is significant (B=.194,  $t=4.699$ ,  $p=.000$ ), and association between SS and flexibility is also significant (B=.083,  $t=2.012$ ,  $p=.045$ ).

### 5.2.12.4. Combine Effects and Potential Predictiveness of SS and FS (PI and PSu) on Explaining the Variance in Originality among the Secondary School Students

**Table No. 5.69. Combine Effect of SS and FS (PI and PSu) on Originality**

Model Summary					
Model	R	R Square	Adjusted R2	SE of Estimate	
1	.144 <sup>a</sup>	.021	.015	16.799	
ANOVA					
Model	Sum Square	df	Mean Square	F	Sig.
Regression	3224.402	3	1074.801	3.809	.010 <sup>b</sup>
Residual	152384.539	540	282.194		
Total	155608.941	543			
a. Dependent Variable: Originality, b. Predictors: (Constant), SS, PSu and PI.					

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	12.269	8.913		1.376	.169
PI	.526	.324	.070	1.623	.105
PSu	.300	.181	.071	1.655	.098
SS	.120	.063	.082	1.899	.058

### Interpretation

Table No.5.69. represents the results of regression analysis, where originality is the dependent variable, and SS score, PSu, and PI are the predictors (Independent variable). The model summary shows the multiple correlations among SS, PI and PSu, and originality is .144 (R). The R Square (.021) and Adjusted R<sup>2</sup> (.015) tells that SS Score, PSu, and PI explains 2.1% variation in originality. Further, the ANOVA results also confirm that this model is significant (F=3.809,  $p=.010$ ). Which means SS Score, PI and PSu is the significant predictor of originality.

Further, the coefficients also reveal that among the predictors, the association between PI and originality is not significant (B=.070,  $t=1.623$ ,  $p=.105$ ), association between PSu and originality is not significant (B=.071,  $t=1.655$ ,  $p=.098$ ), and association between SS Score and originality is also not significant (B=.082,  $t=1.899$ ,  $p=.058$ ).

### 5.2.12.5. Combine Effects and Potential Predictiveness of SS and FS (PI and PSu) on Explaining the Variance in Verbal Creativity among the Secondary School Students

**Table No. 5.70. Combine Effect and Potential Predictiveness of SS and FS (PI and PSu) on Verbal Creativity**

Model Summary					
Model	R	R Square	Adjusted R2	SE of Estimate	
1	.179 <sup>a</sup>	.032	.027	36.203	
ANOVA					
Model	Sum Square	df	Mean Square	F	Sig.
Regression	23454.690	3	7818.230	5.965	.001 <sup>b</sup>
Residual	707761.661	540	1310.670		
Total	731216.351	543			

a. Dependent Variable: Verbal Creativity, b. Predictors: (Constant), SS, PSu and PI.					
Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	15.869	19.209		.826	.409
PI	1.182	.698	.073	1.693	.091
PSu	1.104	.391	.121	2.826	.005
SS Score	.251	.136	.079	1.847	.065

### Interpretation

Table No. 5.70. represents the results of regression analysis, where verbal creativity is the dependent variable, and SS score, PSu, and PI are the predictors (Independent variable). The model summary shows the multiple correlations among SS Score, PI and PSu, and verbal creativity. The R Square (.032) and Adjusted R<sup>2</sup> (.027) tells that SS Score, PSu, and PI explains 3.2 % variation in verbal creativity. Further, the ANOVA results also confirm that this model is significant ( $F=5.965, p=.001$ ). Which means SS Score, PI and PSu is the significant predictor of verbalcreativity.

Further, the coefficients also reveal that among the predictors, the association between PI and verbal creativity is not significant ( $B=.073, t=1.693, p=.091$ ), association between PSu and verbal creativity is significant ( $B=.121, t=2.826, p=.005$ ), and association between SS Score and verbal creativity not significant ( $B=.079, t=1.847, p=.065$ ).

### 5.2.12.6. Combine Effects and Potential Predictiveness of SS and FS (PI and PSu) on Explaining the Variance in Non-Verbal Creativity among the Secondary School Students

**Table No 5.71. Combine Effect and Potential Predictiveness of SS and FS (PI and PSu) on Non-Verbal Creativity**

Model Summary					
Model	R	R Square	Adjusted R2	SE of Estimate	
1	.107 <sup>a</sup>	.011	.006	16.586	
ANOVA					
Model	Sum Square	df	Mean Square	F	Sig.
Regression	1714.035	3	571.345	2.077	.102 <sup>b</sup>

Residual	148546.125	540	275.085		
Total	150260.160	543			
a. Dependent Variable: Non-Verbal Creativity b. Predictors: (Constant), SS, PSu and PI.					
Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	19.505	8.800		2.216	.027
PI	.671	.320	.091	2.098	.036
PSu	.052	.179	.013	.289	.773
SS	.057	.062	.040	.922	.357

### Interpretation

Table No. 5.71. represents the results of regression analysis, where non-verbal creativity is the dependent variable, and SS Score, PSu, and PI are the predictors (Independent variable). The model summary shows the multiple correlations among SS Score, PI and PSu, and non-verbal creativity.107 (R). The R Square (.011) and Adjusted R<sup>2</sup> (.006) tells that SS Score, PSu, and PI explains 1.1% variation in non-verbal creativity. Further, the ANOVA results also confirm that this model is significant (F=2.077,  $p=.102$ ). Which means SS Score, PI and PSu is not significant predictor of non-verbal creativity.

Further, the coefficients also reveal that among the predictors, the association between PI and non-verbal creativity is significant (B=.091,  $t=2.098$ ,  $p=.036$ ), association between PSu and non-verbal creativity is not significant (B=.013,  $t=.289$ ,  $p=.773$ ), and association between SS Score and non-verbal creativity also not significant (B=.040,  $t=.922$ ,  $p=.357$ ).

**5.2.13. Moderating Effect of FS in the Relationship Between SS and Creativity among Secondary School Students.**

*H<sub>011</sub>: FS (in terms of PSs) does not significantly moderate the relationship between SS and creativity among secondary school students in West Bengal.*

To test this hypothesis, regression analysis was run of the moderating variables through Haye's Process Macro in SPSS.

**5.2.13.1. Moderating Effects of Family Support (PSs)**

**Table No. 5.72. Moderation Effect of family support (PSs) in the Relationship between School Support and Creativity**

<b>Model: 1</b>				
<b>Y:</b> Creativity				
<b>X:</b> School Support				
<b>W:</b> Family Support (PSs)				
<b>Coding of categorical W variable for analysis</b>				
	<b>PSs</b>	<b>W1</b>	<b>W2</b>	<b>W3</b>
<b>1</b>	.000	.000	.000	.000
<b>2</b>	.000	1.000	.000	.000
<b>3</b>	.000	.000	1.000	.000
<b>4</b>	.000	.000	.000	1.000
<b>Model Summary</b>				
<b>R</b>	<b>R-Sq</b>	<b>F</b>	<b>P</b>	
.263	.069	5.671	.000	
<b>Coefficients</b>				
	<b>Coeff.</b>	<b>t</b>	<b>P</b>	
SS	1.052	3.104	.002	
W1	30.943	.999	.318	
W2	43.716	1.466	.143	
W3	33.233	1.296	.196	
Int_1: SS x W1	-.854	-1.663	.097	
Int_2: SS x W2	-1.077	-2.206	.028	
Int_3: SS x W3	-.947	-2.204	.028	
<b>X x W</b>				
<b>R<sup>2</sup>-chg</b>	<b>F</b>		<b>P</b>	
.011	2.130		.095	

### Interpretation

The regression analysis results (see table 5.27) shows a low and positive correlation ( $R=0.263$ ) and 6.9% of the variations in creativity is caused by FS and SS all together, and this variation is significant ( $F=5.671$ ,  $p=.000$ ). However, the interaction between SS and FS is not significant ( $X*W=-.011$ ,  $t=3.104$ ,  $p=.095$ ), and the  $R^2$  -change is also not significant ( $R^2\text{-chng}=.008$ ,  $F=1.633$ ,  $p=.203$ ). Which means FS in term of PSs is not significantly moderating the relationship between SS and Creativity among secondary school students.

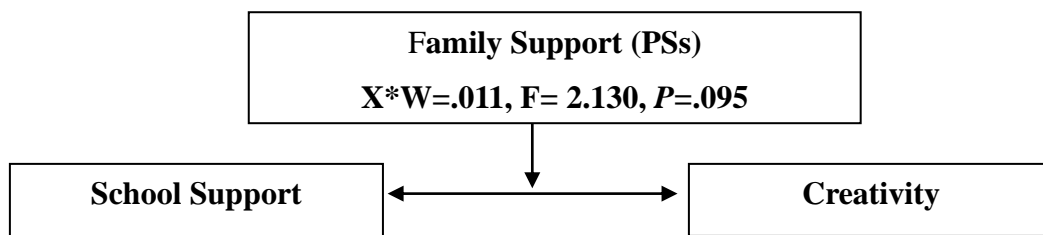


Fig. 5.4. Moderating Effect of Family Support (PSs)

**CHAPTER-VI**  
**MAJOR FINDINGS AND**  
**CONCLUSION**

# **CHAPTER-VI**

## **MAJOR FINDINGS AND CONCLUSION**

### **6.0. Introduction**

The researcher has reached this crucial phase, guided by the comprehensive data analysis and interpretation presented in the previous chapter. This section provides a brief overview of the final aspects of the study, with a particular focus on incorporating critical elements of the conclusion to maintain the study's practicality. The current chapter is structured into five sub-sections: significant findings, discussion of the results, study's implications, limitations, and suggestions for further research. This framework is designed to enhance the clarity and cohesion of the content, ensuring the reader grasps the significance of the study.

### **6.1. Major Findings of the Study**

Based on the previous chapter discussed the analysis and interpretations, the following significant findings were drawn:

#### **6.1.1. Demographics Influence (Class, Gender, Family Type, School Type, Number of Siblings, Father's Educational Qualifications, Mother's Educational Qualifications, and Family Monthly Income) on SS among the secondary school students in WB**

1. There are significant variations in SS among the secondary school students in WB concerning the school type.
2. There are no significant variations in SS concerning the class of secondary school students in WB.
3. There are significant variations in SS among the secondary school students in WB concerning the gender.
4. SS among secondary school students does not vary significantly based on their family type.
5. SS among secondary school students does not vary significantly based on their number of siblings.
6. SS among secondary school students does not vary significantly based on their father's educational qualifications.

7. There are significant variations in SS among the secondary school students in WB concerning their mother's educational qualifications.
8. There are no significant variations in SS concerning the family monthly income of secondary school students in WB.

### **6.1.2. Demographics Influence (Class, Gender, Family Type, School Type, Number of Siblings, Father's Educational Qualifications, Mother's Educational Qualifications, and Family Monthly Income) on FS (PI and PSu) among the secondary school students in WB**

#### **6.1.2.1. Parental Involvement**

1. There are significant variations in PI among the secondary school students in WB concerning the school type.
2. There are no significant variations in PI concerning the class of secondary school students in WB.
3. There are significant variations in PI among the secondary school students in WB concerning the gender.
4. There are no significant variations in PI concerning the family types of secondary school students in WB.
5. There are significant variations in PI among the secondary school students in WB concerning their number of siblings.
6. PI among secondary school students does not vary significantly based on their father's educational qualifications.
7. PI among secondary school students does not vary significantly based on their mother's educational qualifications.
8. There are no significant variations in PI concerning the family monthly income of secondary school students in WB.

#### **6.1.2.2. Parental Supervision**

1. There are significant variations in PSu among the secondary school students in WB concerning the school type.
2. There are no significant variations in PSu among secondary school students based on their class.
3. There are significant variations in PSu among the secondary school students in WB concerning the gender.

4. There are no significant variations in PSu concerning the family types of secondary school students in WB.
5. PSu among secondary school students does not vary significantly based on their number of siblings.
6. PSu among secondary school students vary significantly based on their father's educational qualifications.
7. There are significant variations in PSu among secondary school students across mother's educational qualifications.
8. There are significant variations in PSu concerning the family monthly income of secondary school students in WB.

**6.1.3. Demographics Influence (Class, Gender, Family Type, School Type, Number of Siblings, Father's Educational Qualifications, Mother's Educational Qualifications, and Family Monthly Income) on PSs among the secondary school students in WB**

1. There are significant influences of school type on PSs among secondary school students in WB.
2. There are no significant influences of class on PSs among secondary school students in WB.
3. There are significant influences of gender on PSs among secondary school students in WB.
4. There are no significant influences of family type on PSs among secondary school students in WB.
5. There are no significant influences of number of siblings on PSs among secondary school students in WB.
6. There are significant influences of father's educational qualifications on PSs among secondary school students in WB.
7. There are significant influences of mother's educational qualifications on PSs among secondary school students in WB.
8. There are significant influences of family monthly income on PSs among secondary school students in WB.

#### **6.1.4. Demographics Influence (Class, Gender, Family Type, School Type, Number of Siblings, Father's Educational Qualifications, Mother's Educational Qualifications, and Family Monthly Income) on overall creativity among the secondary school students in WB**

##### **6.1.4.1. Creativity**

1. There are no significant differences in creativity among secondary school students based on their school type.
2. There is no significant difference in creativity among secondary school students concerning their class.
3. There is significant difference in creativity among secondary school students concerning their gender.
4. No significant differences in creativity are observed among secondary school students based on their family type.
5. Creativity among secondary school students does not vary significantly concerning their number of siblings.
6. Significant differences in creativity are observed among secondary school students concerning their father's educational qualifications.
7. Significant differences in creativity are observed among secondary school students concerning their mother's educational qualifications.
8. There is no significant difference in creativity among secondary school students concerning their family monthly income.

##### **6.1.4.2. Fluency**

1. There are no significant differences in fluency among secondary school students based on their school types.
2. There is no significant difference in fluency among secondary school students concerning their class.
3. Fluency among secondary school students does not significantly vary based on their gender.
4. No significant differences in fluency are observed among secondary school students concerning their family type.
5. No significant differences in fluency are observed among secondary school students concerning their number of siblings.

6. Significant differences in fluency are observed among secondary school students based on their father's educational qualifications.
7. Significant differences in fluency are observed among secondary school students based on their mother's educational qualifications.
8. No significant differences in fluency are observed among secondary school students based on their family monthly income.

#### **6.1.4.3. Flexibility**

1. There are significant differences in flexibility among secondary school students based on their school types.
2. There is no significant difference in flexibility among secondary school students concerning their class.
3. Significant differences in flexibility are observed among secondary school students concerning their gender.
4. There are no significant differences in flexibility among secondary school students based on their family type.
5. No significant differences in flexibility are observed among secondary school students concerning their number of siblings.
6. No significant differences in flexibility are observed among secondary school students based on their father's educational qualifications.
7. No significant differences in flexibility are observed among secondary school students based on their mother's educational qualifications.
8. Significant differences in flexibility are observed among secondary school students based on their family monthly income.

#### **6.1.4.4. Originality**

1. There are significant differences in originality among secondary school students based on their school types.
2. There is no significant difference in originality among secondary school students concerning their class.
3. No significant differences in originality are observed among secondary school students based on their gender.
4. There are no significant differences in originality among secondary school students based on their family type.

5. No significant differences in originality are observed among secondary school students concerning their number of siblings.
6. No significant differences in originality are observed among secondary school students based on their father's educational qualifications.
7. Significant differences in originality are observed among secondary school students concerning their mother's educational qualifications.
8. No significant differences in originality are observed among secondary school students concerning their family monthly income.

**6.1.5. Demographics Influence (Class, Gender, Family Type, School Type, Number of Siblings, Father's Educational Qualifications, Mother's Educational Qualifications, and Family Monthly Income) on verbal creativity among the secondary school students in WB**

**6.1.5.1. Verbal creativity**

1. There is a significant difference in verbal creativity among secondary school students based on their school type.
2. There is no significant difference in verbal creativity among secondary school students concerning their class.
3. There is no significant difference in verbal creativity among secondary school students concerning their gender.
4. No significant differences in verbal creativity are observed among secondary school students based on their family type.
5. No significant differences in verbal creativity are observed among secondary school students concerning their number of siblings.
6. Significant differences in verbal creativity are observed among secondary school students based on their father's educational qualifications.
7. Significant differences in verbal creativity are observed among secondary school students based on their mother's educational qualifications.
8. No significant differences in verbal creativity are observed among secondary school students concerning their family monthly income.

**6.1.5.2. Verbal Fluency**

1. There are significant differences in verbal fluency among secondary school students based on their school types.

2. There is no significant difference in verbal fluency among secondary school students concerning their class.
3. There is no significant difference in verbal fluency among secondary school students concerning their gender.
4. No significant differences in verbal fluency are observed among secondary school students based on their family type.
5. No significant differences in verbal fluency are observed among secondary school students based on their number of siblings.
6. Significant differences in verbal fluency are observed among secondary school students based on their father's educational qualifications.
7. Significant differences in verbal fluency are observed among secondary school students based on their mother's educational qualifications.
8. No significant differences in verbal fluency are observed among secondary school students based on their family monthly income.

#### **6.1.5.3. Verbal Flexibility**

1. There are significant differences in verbal flexibility among secondary school students based on their school types.
2. There is no significant difference in verbal flexibility among secondary school students concerning their class.
3. Significant differences in verbal flexibility are observed among secondary school students based on their gender.
4. There is no significant difference in verbal flexibility among secondary school students based on their family type.
5. There is no significant difference in verbal flexibility among secondary school students based on their number of siblings.
6. No significant differences in verbal flexibility are observed among secondary school students concerning their father's educational qualifications.
7. No significant differences in verbal flexibility are observed among secondary school students concerning mother's educational qualifications.
8. No significant differences in verbal flexibility are observed among secondary school students based on their family monthly income.

#### **6.1.5.4. Verbal Originality**

1. There are no significant differences in verbal originality among secondary school students based on their school types.

2. There is no significant difference in verbal originality among secondary school students concerning their class.
3. Significant differences in verbal originality are observed among secondary school students based on their gender.
4. There is no significant difference in verbal originality among secondary school students based on their family type.
5. Verbal originality among secondary school students does not significantly vary concerning their number of siblings.
6. Significant differences in verbal originality are observed among secondary school students based on their father's educational qualifications.
7. Significant differences in verbal originality are observed among secondary school students based on their mother's educational qualifications.
8. No significant differences in verbal originality are observed among secondary school students based on their family monthly income.

**6.1.6. Demographics Influence (Class, Gender, Family Type, School Type, Number of Siblings, Father's Educational Qualifications, Mother's Educational Qualifications, and Family Monthly Income) on non-verbal creativity among the secondary school students in WB**

**6.1.6.1. Non-verbal creativity**

1. There are significant differences in non-verbal creativity among secondary school students based on their school types.
2. There are significant differences observed in non-verbal creativity among secondary school students concerning their class.
3. Significant differences in non-verbal creativity are observed among secondary school students based on their gender.
4. No significant differences in non-verbal creativity are observed among secondary school students based on their family type.
5. Non-verbal creativity among secondary school students does not significantly vary based on their number of siblings.
6. No significant differences in non-verbal creativity are observed among secondary school students based on their father's educational qualifications.
7. No significant differences in non-verbal creativity are observed among secondary school students based on their mother's educational qualifications.

8. Significant differences in non-verbal creativity are observed among secondary school students based on their family monthly income.

#### **6.1.6.2. Non-Verbal Fluency**

1. There are significant differences in non-verbal fluency among secondary school students based on their school types.
2. There are significant differences observed in non-verbal fluency among secondary school students concerning their class.
3. There are significant differences observed in non-verbal fluency among secondary school students concerning their gender.
4. No significant differences in non-verbal fluency are observed among secondary school students based on their family type.
5. No significant differences in non-verbal fluency are observed among secondary school students based on their number of siblings.
6. No significant differences in non-verbal fluency are observed among secondary school students based on their father's educational qualifications.
7. Significant differences in non-verbal fluency are observed among secondary school students based on their mother's educational qualifications.
8. Significant differences in non-verbal fluency are observed among secondary school students based on their family monthly income.

#### **6.1.6.3. Non-Verbal Flexibility**

1. There are no significant differences in non-verbal flexibility among secondary school students based on their school types.
2. There are no significant differences observed in non-verbal flexibility among secondary school students concerning their class.
3. No significant differences in non-verbal flexibility are observed among secondary school students based on their gender.
4. There are no significant differences observed in non-verbal flexibility among secondary school students based on their family type.
5. Non-verbal flexibility among secondary school students does not significantly vary based on their number of siblings.
6. No significant differences in non-verbal flexibility are observed among secondary school students based on their father's educational qualifications.
7. No significant differences in non-verbal flexibility are observed among secondary school students based on their mother's educational qualifications.

8. Significant differences in non-verbal flexibility are observed among secondary school students based on their family monthly income.

#### **6.1.6.4. Non-Verbal Originality**

1. There are significant differences in non-verbal originality among secondary school students based on their school types.
2. There is significant difference observed in non-verbal originality among secondary school students concerning their class.
3. Significant differences in non-verbal originality are observed among secondary school students based on their gender.
4. There are no significant differences in non-verbal originality among secondary school students based on their family type.
5. Non-verbal originality among secondary school students does not significantly vary based on their number of siblings.
6. No significant differences in non-verbal originality are observed among secondary school students based on their father's educational qualifications.
7. No significant differences in non-verbal originality are observed among secondary school students based on their mother's educational qualifications.
8. No significant differences in non-verbal originality are observed among secondary school students based on their family monthly income.

#### **6.1.7. Relationship between SS, FS (PI and PSu), and creativity among secondary school students in WB**

1. A very low positive and significant relationship exists between SS and PI among secondary school students is found.
2. There are very low positive and significant relationships exists between SS and PSu among secondary school students.
3. A very low positive and significant relationship exists between exists SS and creativity among secondary school students.
4. A very low positive and significant relationship exists between PI and PSu.
5. There is a very low positive and significant relationships exists between PI and creativity.
6. There is a very low positive and significant relationships exists between PSu and creativity.

**6.1.8. Effects of SS on overall and dimension-wise (fluency, flexibility and originality) creativity among secondary school students**

1. SS has a statistically significant effect and explains only 1% of the variations in overall creativity among secondary school students.
2. SS has a statistically significant effect and explains only .8% of the variations in overall fluency among secondary school students.
3. SS has a statistically significant effect and explains only 1.4% of the variations in overall flexibility among secondary school students.
4. SS has a statistically significant effect and explains only .9% of the variations in overall originality among secondary school students.
5. SS has a statistically significant effect and explains only 1% of the variations in verbal creativity among secondary school students.
6. SS has no significant effect on non-verbal creativity among secondary school students.

**6.1.9. Effects of FS (PI and PSu) on overall and dimension-wise (fluency, flexibility and originality) creativity among secondary school students**

1. PI and PSu together significantly predict 2.6% of the variance in overall creativity among secondary school students.
2. PI and PSu together significantly predict 1.4% of the variance in overall fluency among secondary school students.
3. PI and PSu together significantly predict 9.8% of the variance in overall flexibility among secondary school students.
4. PI and PSu together significantly predict 1.4% of the variance in overall originality among secondary school students.
5. PI and PSu together significantly predict 2.6% of the variance in verbal creativity among secondary school students.
6. PI and PSu have no effect on non-verbal creativity among secondary school students.

**6.1.10. Effects of SS, FS (PI and PSu) on overall and dimension-wise (fluency, flexibility and originality) creativity among secondary school students**

1. SS and FS together significantly predict 3.3% of the variance in overall creativity among secondary school students.

2. SS and FS together significantly predict 1.9% of the variance in overall fluency among secondary school students.
3. SS and FS together significantly predict 10.5% of the variance in overall flexibility among secondary school students.
4. SS and FS together significantly predict 2.1% of the variance in overall originality among secondary school students.
5. SS and FS together significantly predict 3.2% of the variance in verbal creativity among secondary school students.
6. SS and FS have no effect on non-verbal creativity among secondary students.

#### **6.1.11. Moderating Effects of Selected FS Factors in the Relationship between SS and Creativity.**

1. FS (in terms of PSs) does not significantly moderate the relationship between SS and creativity among secondary school students.

## **6.2. Discussion of the Major Findings**

### **Creativity**

Creativity is an ability characterized by fluency, flexibility and originality in generating new ideas or products. It is influenced by various factors (Kurylenko, 2024). One of the results of the present study revealed that there is a significant difference in verbal creative flexibility among secondary school students in terms of gender, which means the ability to create diverse and original ideas through language. This finding was supported by Biswal et al. (2024), Ayishajuhi and Sreeletha (2019), and Pont-Niclòs et al. (2024). Various cognitive, social and environmental factors may lie behind this difference. Biological factors, such as brain structure, language processing, childhood experiences, etc., may have an effect (Sun et al., 2024). Different social and cultural norms play a role in shaping creative abilities (Kumari, 2020), as boys and girls follow these different norms from childhood. Moreover, the learning environment plays a crucial role in this regard (Breti, 2024). Because different teaching methods can affect students' verbal creative flexibility, this gap can be bridged through support for both genders by fostering an inclusive learning environment for creative expression among secondary school students.

The present study also highlights those significant differences in nonverbal creativity among secondary school students based on school type, class, gender, and family

income. This finding is supported by Adeyemo (2020). These findings suggest that, beyond verbal expression, various factors influence students' creative abilities. Like, differences in school type, resources, teaching methods, and other opportunities can affect creativity. Similarly, higher-class students may exhibit more nonverbal creativity due to increased exposure. Again, social expectations and upbringing style may account for gender differences in creativity. Additionally, family income also plays an important role in creativity (Sarsani, 2011). For example, financially stable families can easily provide their children with creative tools and a rich learning environment, which encourages their non-verbal creative growth.

### **School Support**

In the case of SS, the study findings revealed that SS has a statistically significant effect on the variations in overall creativity among secondary school students. This finding is similar to the findings of Peng et al. (2013), Dung My Le et al. (2022) and Kalogeratos et al. (2023). The role of the educational environment in developing creative potential is very important (Breti, 2024). Schools that provide opportunities for creative expression enable students to explore innovative ideas. Conversely, a lack of support may hinder students' creative development.

The study also found that SS has a statistically significant effect and explains only (1.4%) of the variations in overall flexibility among secondary school students. This finding is supported by Dung My Le et al. (2022). While school support significantly affects overall flexibility, many other factors may contribute more significantly to students' cognitive flexibility. Such as personal characteristics, home environment, and social interaction patterns can have a strong influence. This indicates that providing institutional support alone is not enough. Therefore, this requires a holistic support environment, where a positive collaborative effort between school, family and community is essential.

Furthermore, the study findings revealed that a positive and significant relationship exists between SS and creativity among secondary school students. This finding is supported by Arora and Kaur (2014). So, it is clear that the educational environment is important in the positive and significant relationship between SS and creativity among secondary students. In school environments that provide opportunities and encouragement for students to express their creative expression, students develop innovative thinking.

## **Family Support**

In the case of FS, the study findings revealed significant differences in parenting styles among secondary school students based on their gender. This finding is supported by Zhao and Yang (2021). This finding suggests that parents may adopt different approaches to raising their children.

The present study revealed that PI and PSu together significantly predict 2.6% of the variations in overall creativity among secondary school students. This finding is supported by Mehrinejad et al. (2015), Pugsley and Acar (2020), Tang et al. (2022) and Jankowska and Gralewski (2022). While parental influence is important in this regard, there are other factors that may play a more important role. For example, experience, motivation, interaction and school environment can play an important role. While supportive parenting is useful in providing a foundation for creative thinking, strict supervision can sometimes limit a child's independent exploration.

The present study also revealed positive and significant relationships between parental involvement, parenting supervision and creativity. This finding is supported by Fearon et al. (2013), Nosrati et al. (2014), Lew (2015), Ramezani et al. (2017) and Shen (2021). Parents' active participation in their children's education encourages the student's exploration and creativity. However, if supervision is overly restrictive, it may limit the freedom to express the child's creative potential (Fan, Feng, & Zhang, 2024).

The present study also reflects significant difference in flexibility observed among secondary school students based on their family monthly income. A similar result was revealed by Sinha (2021). He showed that students from high socioeconomic status backgrounds demonstrated better verbal and non-verbal creative potential. It suggests that family monthly income or economic factors affect the cognitive and creative ability of students (Sarsani, 2011). Students from higher-income families typically have access to a variety of environments that provide flexible thinking development. In contrast, students from low-income backgrounds may have limited exposure to diverse experiences. This study, therefore, emphasizes the need for schools to bridge this gap by providing opportunities.

## **Creativity, School Support and Family Support**

The present study revealed that school and family support together significantly predict 3.3 % of the variations in overall creativity among secondary school students. This finding is similar to the findings of Zhang et al. (2022) and Alabbasi et al. (2024). It suggests that although supervision plays a significant role in enhancing creativity, its

effect is minimal. Just as parental overcontrol can limit a child's independent thinking, a balanced approach-freedom environment can better nurture creativity. This suggests that parents should encourage children's curiosity, problem-solving and exploration.

### **6.3. Educational Implications of the Study**

This study as signification implications in education and other related fields.

1. This study will help to assess the level of creativity, SS, and FS among secondary school students, which can be used to plan future directions.
2. This study will help identify the influential demographic factors in creativity, SS, and FS. Once those factors are known, students, their teachers, and their parents can manipulate and control them to achieve the desired outcomes.
3. As SS, FS, and creativity are positively and significantly correlated, and SS and FS significantly predict variations in creativity, therefore, providing a proper school and FS can foster students' creativity.
4. Regarding gender, female students received more SS and FS than male students. Therefore, administrators and policymakers should implement gender-sensitive programs to eradicate the gap in school support and educate parents on the importance of PSu and PI for both male and female students.
5. The present study will also help the higher authority to maintain SS in fostering creativity when implementing the new educational policy.
6. As our findings revealed, there is a significant difference in PSs concerning mothers' and fathers' educational qualifications, therefore, conducting parenting workshops and seminars could be beneficial to assist parents in understanding the influence of PSs on students' creativity.
7. The school types influence students' flexibility and originality. Therefore, policymakers and organizations must provide equal creative platforms for every school.
8. A positive and significant correlation existed between SS, FS, and Creativity. As a result, schools should integrate creative activities into the curriculum, such as arts programs, project-based learning, and collaborative problem-solving programs, to nurture creativity. Also, schools should communicate with parents and share strategies that will assist parents in fostering creativity.
9. The findings revealed that FS and SS can significantly predict creativity. This result emphasizes the collaborative efforts of schools and families to nurture

creativity. Schools and families should encourage students to solve everyday problems in creative ways. Therefore, a consistently supportive environment both inside and outside the classroom can maximize students' creativity. It will lead them to better innovative and adaptation skills in the future.

#### **6.4. Limitations of the Study**

The major limitations of the study lie in the following:

1. The present study did not cover secondary level school students under ICSE and CBSE or other boards.
2. Time played an important role in administering and recording the creativity tests. However, some unavoidable errors occurred while recording students' responses and time, which may influence the results.
3. There were no such fixed responses in the creativity tests; assigning scores for creativity was quite difficult.
4. Assigning creativity scores by a single person is quite challenging, so the researcher sought assistance. These in-person variations may influence the results.
5. Parenting was measured in terms of perceived parenting, which may not reveal the parents' actual parenting styles.

#### **6.5. Suggestions for Further Study**

Several areas warrant attention to build on this research's findings and improve the robustness of future studies.

1. This study could be undertaken by covering secondary-level school students under all the affiliating boards, such as WBBSE, ICSE, CBSE, or other boards, and a larger number of districts.
2. While administering the creativity tests and recording response time, researchers must also pay proper attention to time counting to avoid errors.
3. While assigning creativity scores, further researchers may seek assistance from other people, but before that, the research must give them proper training for assigning scores, and they should assign scores in the presence of the researcher.
4. For measuring family support, further researchers may collect data directly from parents and also use other scales.

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# **APPENDICES**

**Appendix-A**  
**Bona Fide Letter**

যাদবপুর বিশ্ববিদ্যালয়  
কলকাতা-৭০০০৩২, ভারত



**\*JADAVPUR UNIVERSITY**  
**KOLKATA-700032, INDIA**

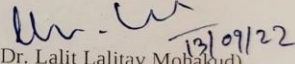
**DEPARTMENT OF EDUCATION**

**TO WHOM IT MAY CONCERN**

This is to certify that SRI KALYAN GHORAI is a registered Ph.D. research scholar of the Department of Education, Jadavpur University, bearing Registration No.: A00ED1200418. He has been pursuing his Ph.D. research on the topic – *Creativity among Secondary School Students in relation to Family and School Support*, under the supervision of the undersigned.

In order to successfully complete his research work, Kalyan Ghorai needs to conduct research survey to explore the family and school support in fostering creativity among secondary school students, considering different demographic features. The undersigned hereby requests the concerned to kindly allow Kalyan Ghorai to conduct his research work in his institution. The undersigned hopes that the request will be considered favourably.

Date: September 13, 2022

  
(Dr. Lalit Lalitav Mohakud)  
Asst. Professor  
Department of Education  
Jadavpur University

Mr. Lalit Lalitav Mohakud (Ph D.)  
Asst. Professor  
Dept. of Education,  
Jadavpur University, Kolkata-700032

\*Established on and from 24th December, 1955 vide Notification No. 10986/IU-42/55 dated 6th December, 1955 under Jadavpur University Act, 1955 (West Bengal Act XXXIII of 1955) followed by Jadavpur University Act, 1981 (West Bengal Act XXIV of 1981)

দূরভাষা : (৯১) - ০৩৩ - ২৪৫৭-২৮৮২  
দূরবার্তা : (৯১) - ০৩৩ - ২৪১৪-৬০০৮

Website : [www.jadavpur.edu](http://www.jadavpur.edu)  
E-mail : [education.JU@gmail.com](mailto:education.JU@gmail.com)  
[hod@education.jdvu.ac.in](mailto:hod@education.jdvu.ac.in)

Phone : (91)-033-2457-2882  
Fax : (91)-033-2414-6008

**Appendix-B**  
**Consent Form**

**INFORMED CONSENT LETTER FOR HEADMASTER / HEADMISTRESS/ PRINCIPAL**

Investigator's Name: Kalyan Ghorai  
Department: Education  
Institution: Jadavpur University  
Phone Number: 7063516066  
Supervisor's Name: Lalit Lalitav Mohakud, PhD.  
Associate Professor, Dept. of Education, Jadavpur University  
Co-Supervisor's Name: Mita Howladar, Ph.D.  
Associate Professor, Dept. of Education, Jadavpur University

Respected Sir/Madam,

I, Kalyan Ghorai, am a Ph.D. scholar at the Department of Education, Jadavpur University. The title of my research work is "Creativity among Secondary School Students: The Role of School and Family Support".

The purpose of my study is to explore the Creativity, School Support (SS) and Family Support (FS), its sub-scales. I want to find out the relationship between Creativity, SS and FS and their sub scales based on Secondary School students selected demographic variables. My aim is to analyse the relationship between Creativity, SS and FS and their sub scales. I also want to examine the effect of Creativity with the help of SS and FS and their sub scales, as well as find out which one of SS and FS is more effective for Creativity. For the above purposes, I will survey Secondary-level school students in the West Medinipur district of West Bengal and collect data from them through the following four instruments:

1. "Demographic Profile of the Participant" developed by Dr. L. L. Mohakud and K. Ghorai
2. "School Environment Inventory" of Dr. K. S. Misra
3. "Passi test of creativity" of Prof. B.K. Passi
4. "Parenting Style Scale" of Lamborn et al.

It generally takes 120 minutes to complete all the questionnaires/scales. Therefore, I will ask your students to participate in this survey during any recess period or any other period you assign without hampering your school activities, subject to individual students' consent.

I will create a number coding system for each participant to ensure the confidentiality of their data. Any information collected for this study that could be associated with the subjects will only be used by the researcher mentioned above with strict confidentiality.

You are free to ask any questions about the study at any time. If you want to take an interest in the study, you will get information anytime. Participation in this study is voluntary, and your students may refuse to participate at any time. This data shall be used only for the researcher's PhD work and will be available until the end of the study and related publications.

Signing below means that you have read and comprehended the matters of this Consent Form and given your consent regarding your and students' participation in this study.

-----  
Name of the School and Signature of HM / Principal / Teacher in Charge with Date  
-----

Investigator's Signature with Date

## INFORMED CONSENT LETTER FOR PARENT/GUARDIAN

Investigator's Name: Kalyan Ghorai  
Department: Education  
Institution: Jadavpur University  
Phone Number: 7063516066  
Supervisor's Name: Lalit Lalitav Mohakud, Ph.D.  
Associate Professor, Dept. of Education, Jadavpur University  
Co-Supervisor's Name: Mita Howladar, Ph.D.  
Associate Professor, Dept. of Education, Jadavpur University

Dear Parent/Guardian,

I, Kalyan Ghorai, am a PhD scholar at the Department of Education, Jadavpur University. The title of my research work is "Creativity among Secondary School Students: The Role of School and Family Support".

The purpose of my study is to explore the Creativity, School Support (SS) and Family Support (FS), its sub-scales. I want to find out the relationship between Creativity, SS and FS and their sub scales based on Secondary School students selected demographic variables. My aim is to analyse the relationship between Creativity, SS and FS and their sub scales. I also want to examine the effect of Creativity with the help of SS and FS and their sub scales, as well as find out which one of SS and FS is more effective for Creativity. For the above purposes, I will survey Secondary-level school students in the West Medinipur district of West Bengal and collect data from them through the following four instruments:

1. "Demographic Profile of the Participant" developed by Dr. L. L. Mohakud and K. Ghorai
2. "School Environment Inventory" of Dr. K. S. Misra
3. "Passi test of creativity" of Prof. B.K. Passi
4. "Parenting Style Scale" of Lamborn et al.

It generally takes 120 minutes to complete all the questionnaires/scales. Therefore, I will ask your child to participate in this survey during any recess period or any other period as assigned by HM of your child's school without hampering his/her school activities, subject to individual students' consent.

I will create a number coding system for each participant to ensure the confidentiality of their data. Any information collected for this study that could be associated with the subjects will only be used by the researcher mentioned above with strict confidentiality.

You are free to ask any questions about the study at any time. If you want to take an interest in the study, you will get information anytime. Participation in this study is voluntary, and your students may refuse to participate at any time. This data shall be used only for the researcher's PhD work and will be available until the end of the study and related publications.

Signing below means that you have read and comprehended the matters of this Consent Form and given your consent regarding your and students' participation in this study.

-----  
Student's Name and Parent/Guardian Signature with Date

-----  
Investigator's Signature with Date

## INFORMED CONSENT FORM FOR STUDENT

Investigator's Name: Kalyan Ghorai  
Department: Education  
Institution: Jadavpur University  
Phone Number: 7063516066  
Supervisor's Name: Lalit Lalitav Mohakud, Ph.D.  
Associate Professor, Dept. of Education, Jadavpur University  
Co-Supervisor's Name: Mita Howladar, Ph.D.  
Associate Professor, Dept. of Education, Jadavpur University

Dear Participant,

I, Kalyan Ghorai, am a Ph.D. scholar at the Department of Education, Jadavpur University. The title of my research work is "Creativity among Secondary School Students: The Role of School and Family Support".

The purpose of my study is to explore the Creativity, School Support (SS) and Family Support (FS), its sub-scales. I want to find out the relationship between Creativity, SS and FS and their sub scales based on Secondary School students selected demographic variables. My aim is to analyse the relationship between Creativity, SS and FS and their sub scales. I also want to examine the effect of Creativity with the help of SS and FS and their sub scales, as well as find out which one of SS and FS is more effective for Creativity. For the above purposes, I will survey Secondary-level school students in the West Medinipur district of West Bengal and collect data from them through the following Four instruments:

1. "Demographic Profile of the Participant" developed by Dr. L. L. Mohakud and K. Ghorai
2. "School Environment Inventory" of Dr. K. S. Misra
3. "Passi test of creativity" of Prof. B.K. Passi
4. "Parenting Style Scale" of Lamborn et al.

It generally takes 120 minutes to complete all the questionnaires/scales. Therefore, I will ask you to participate in this survey during any recess period or any other period as assigned by HM of your school without hampering your school activities.

I will create a number coding system for each participant to ensure the confidentiality of their data. Any information collected for this study that could be associated with the subjects will only be used by the researcher mentioned above with strict confidentiality.

You are free to ask any questions about the study at any time. If you want to take an interest in the study, you will get information anytime. Participation in this study is voluntary, and your students may refuse to participate at any time. This data shall be used only for the researcher's Ph.D. work and will be available until the end of the study and related publications.

Signing below means that you have read and comprehended the matters of this Consent Form and given your consent regarding your and students' participation in this study.

-----  
Student's Signature with Date

-----  
Investigator's Signature with Date

## Appendix – C

### *Demographic Profile of the Participant*

অনুগ্রহ করে নিম্ন লিখিত তথ্যগুলি পূরণ করো-

শিক্ষার্থীর নাম: .....

বিদ্যালয়ের নাম: .....

বিদ্যালয়ের ধরন:                    বালিকা বিদ্যালয় / বালক বিদ্যালয় / সহ-শিক্ষা বিদ্যালয়

লিঙ্গ: বালক / বালিকা

শ্রেণী: নবম / দশম

পরিবারের ধরন:                    একান্নবর্তি পরিবার / ক্ষুদ্র পরিবার

ভাই-বোনের সংখ্যা:

পিতার শিক্ষাগত যোগ্যতা:    প্রাথমিক (Up to class VIII) / মাধ্যমিক এবং উচ্চ মাধ্যমিক  
(Class-IX to XII) / স্নাতক এবং উর্ধ্ব

মাতার শিক্ষাগত যোগ্যতা:    প্রাথমিক (Up to class VIII) / মাধ্যমিক এবং উচ্চ মাধ্যমিক  
(Class-IX to XII) / স্নাতক এবং উর্ধ্ব

পরিবারের মাসিক আয়:        (6,174- তার কম / 6,175-18,496 / 18,497- 30,830 / 30,831-  
46,128 / 46,189- তার অধিক

## Appendix- D

<i>Passi Test of Creativity</i>			
Prof. B. K. Passi (Indore)			
<b>I SEEING PROBLEMS TEST( সমস্যা সম্পর্কিত পরীক্ষা )</b>			
	<b>(i) Object- SHOES ( বিষয়- জুতো )</b>		<b>(ii) Object- PEN ( বিষয়- কলম )</b>
Sl. No.	Defects and Problems ত্রুটি এবং সমস্যা	Sl. No.	Defects and Problems ত্রুটি এবং সমস্যা
<b>1.</b>		<b>1.</b>	
<b>2.</b>		<b>2.</b>	
<b>3.</b>		<b>3.</b>	
<b>4.</b>		<b>4.</b>	
<b>5.</b>		<b>5.</b>	
<b>6.</b>		<b>6.</b>	
<b>7.</b>		<b>7.</b>	
<b>8.</b>		<b>8.</b>	
<b>9.</b>		<b>9.</b>	
<b>10.</b>		<b>10.</b>	
<b>11.</b>		<b>11.</b>	
<b>12.</b>		<b>12.</b>	
<b>13.</b>		<b>13.</b>	
<b>14.</b>		<b>14.</b>	
<b>15.</b>		<b>15.</b>	



<b>II UNUSUAL USES TEST ( অসাধারণ ব্যবহারের পরীক্ষা )</b>			
<b>(i) Object- PIECE OF CLOTH (বিষয়- কাপড়ের টুকরো)</b>		<b>(ii) Object- BOTTLE (বিষয় - বোতল)</b>	
Sl. No.	Uses (ব্যবহার)	Sl. No.	Uses (ব্যবহার)
1.		1.	
2.		2.	
3.		3.	
4.		4.	
5.		5.	
6.		6.	
7.		7.	
8.		8.	
9.		9.	
10.		10.	
11.		11.	
12.		12.	
13.		13.	
14.		14.	
15.		15.	



<b>III CONSEQUENCES TEST (পরিণাম জনিত পরীক্ষা)</b>			
<b>(iii) If all people become mad. ( যদি সব মানুষ পাগল হয়ে যায় )</b>		<b>(iv) If all females become male. ( যদি সব নারী পুরুষ হয়ে যায় )</b>	
Sl. No.	Consequences (ফলাফল / পরিণাম)	sl. No.	Consequences (ফলাফল / পরিণাম)
1.		1.	
2.		2.	
3.		3.	
4.		4.	
5.		5.	
6.		6.	
7.		7.	
8.		8.	
9.		9.	
10.		10.	
11.		11.	
12.		12.	
13.		13.	
14.		14.	
15.		15.	

**IV) Test of Inquisitiveness ( অনুসন্ধান মূলক পরীক্ষা )**

<b>Sl. No.</b>	<b>Questions ( প্রশ্ন )</b>
1.	
2.	
3.	
4.	
5.	
6.	
7	
8	
9	
10	

**V) Test of Rectangle Puzzles**

**আয়তক্ষেত্রের ধাঁধা পরীক্ষা**

VI) Block Test of Creativity (সৃজনশীলতার ঘনক পরীক্ষা)			
[1]	[2]	[3]	[4]
[5]	[6]	[7]	[8]
[9]	[10]	[11]	[12]
[13]	[14]	[15]	[16]

Sl. No.	Write the name of the Products	Remarks	Sl. No.	Write the name of the Products	Remarks
	জিনিসের নাম লেখো	মন্তব্য		জিনিসের নাম লেখো	মন্তব্য
1			9		
2			10		
3			11		
4			12		
5			13		
6			14		
7			15		
8			16		

## Appendix- E

### *School Environment Inventory*

Dr. K. S. Mishra (Allahabad)

### নির্দেশাবলী

এই সূচকে মোট ২০ টি বক্তব্য দেওয়া আছে। এই বক্তব্য গুলি বিদ্যালয়-পরিবেশের বিভিন্ন বিষয়ের সঙ্গে সম্পর্কিত। এটি পাঁচটি বিকল্প বিশিষ্ট Likart scale। এর পাঁচটি বিকল্প হল- সর্বদা, প্রায়ই, কখনো কখনো, খুবই কম, এবং কখনোই না। সূচকের প্রতিটি বক্তব্যের জন্য নির্দিষ্ট পাঁচটি বিকল্পের মধ্যে থেকে তোমার পছন্দের বিকল্পটি চিহ্নিত করার আগে প্রতিটি বক্তব্য মনোযোগ দিয়ে পড়ো এবং তোমার সবচেয়ে বেশি পছন্দের বিকল্পটিতে একটি (✓) চিহ্ন দাও।  
উদাহরন স্বরূপঃ

বিবৃতি	সর্বদা	প্রায়ই	কখনো কখনো	খুবই কম	কখনোই না
শিক্ষক মহাশয় ছাত্রদের অপমান করেন।				✓	

( উপরোক্ত বিবৃতির ক্ষেত্রে **চতুর্থ** বিকল্পটি বেছে নেওয়া হয়েছে )

এখানে দেওয়া তোমার মতামতের সম্পূর্ণ গোপনীয়তা বজায় রাখা হবে এবং প্রাপ্ত উপাত্ত (Data) শুধুমাত্র গবেষণার কাজে ব্যবহৃত হবে। দ্রুত মতামত দেওয়ার চেষ্টা করো এবং যদি কোণ সন্দেহ থাকে তাহলে জিজ্ঞাসা করো।

Sl. No.	STATEMENTS (বিবৃতি)	RESPONSE ( প্রতিক্রিয়া )				
		Always	Often	Some time	Very rarely	Never
		সর্বদা	প্রায়ই	কখনো কখনো	খুবই কম	কখনোই না
1	I discussed with teachers the controversial issues related to subject. ( আমি শিক্ষকদের সঙ্গে পাঠ্য বিষয়ের বিতর্কিত প্রসঙ্গ নিয়ে আলোচনা করি। )					
2	Teachers encourage to develop new ideas. ( শিক্ষকরা নতুন ধারণা তৈরি করতে উৎসাহিত করেন। )					
3	Teachers impart different types of experiences. ( শিক্ষকরা বিভিন্ন ধরনের অভিজ্ঞতা প্রদান করেন। )					
4	Teachers try to make their teaching interesting in several ways. ( শিক্ষকরা বিভিন্ন পদ্ধতিতে তাঁদের পাঠদানকে আকর্ষণীয় করার চেষ্টা করেন। )					

5	Teachers give opportunity to stabilize the learned material. ( শিক্ষকরা শিক্ষণীয় বিষয় সুদৃঢ় করার সুযোগ দেন। )					
6	Teachers explain the difficult things in several different ways. ( শিক্ষকরা জটিল বিষয় গুলিকে বিভিন্ন উপায়ে ব্যাখ্যা করেন। )					
7	Teachers talk other things also apart from curriculum. ( শিক্ষকরা পাঠ্যক্রম ছাড়াও অন্যান্য বিষয় নিয়ে আলোচনা করেন। )					
8	Teachers while teaching give several examples related to our life situations. ( পাঠদানের সময় শিক্ষকরা আমাদের জীবনের সঙ্গে সম্পর্কিত বিভিন্ন ধরনের উদাহরণ দেন। )					
9	Students on several occasions freely express their difference of opinion verbally. ( শিক্ষার্থীরা স্বাধীন ভাবে বিভিন্ন বিষয়ে মত পার্থক্য ব্যক্ত করে। )					
10	Teachers seldom test the progressive development of the students. ( শিক্ষকরা শিক্ষার্থীদের প্রগতিশীল বিকাশের মূল্যায়ন খুবই কম করেন। )					

11	Teachers do not interfere in the independent study of the students. ( শিক্ষার্থীদের স্বাধীন ভাবে অধ্যয়নে শিক্ষকরা হস্তক্ষেপ করেন না। )					
12	Teachers ask thought-provoking questions. ( শিক্ষকরা 'চিন্তা-উদ্ভাবনকারী প্রশ্ন' জিজ্ঞাসা করেন। )					
13	Teachers create appropriate environment to present new thoughts. ( শিক্ষকরা নতুন চিন্তা সৃষ্টিতে উপযুক্ত পরিবেশ তৈরি করেন। )					
14	Teachers ask our opinion about stories, instances, games, experiments etc. ( শিক্ষকরা গল্প, উদাহরণ, খেলা, পরীক্ষা নিরীক্ষা ইত্যাদি সম্পর্কে আমাদের মতামত জানতে চান। )					
15	Teachers encourage the students to write their answers themselves. ( শিক্ষকরা শিক্ষার্থীদের নিজে নিজে উত্তর লিখতে উৎসাহিত করেন। )					
16	Teachers ask methods to solve the important problems. ( শিক্ষকরা গুরুত্বপূর্ণ সমস্যার সমাধানের বিভিন্ন পদ্ধতি সম্পর্কে জিজ্ঞাসা করেন। )					

17	<p>Teachers never emphasise to learn the notes given by them.</p> <p>( শিক্ষকরা কখনোই তাদের দেওয়া নোটস পড়ার জন্য জোর দেননা। )</p>					
18	<p>Teachers emphasize to express one thing in several specific ways.</p> <p>( শিক্ষকরা কোনো একটি বিষয়কে নানান উপায়ে ব্যক্ত করার উপর জোর দেন। )</p>					
19	<p>Teachers ask several questions to students while teaching.</p> <p>( শিক্ষকরা পাঠদানের সময় শিক্ষার্থীদের বিভিন্ন ধরনের প্রশ্ন করেন। )</p>					
20	<p>Teachers emphasize the new uses of different things.</p> <p>( শিক্ষকরা বিভিন্ন জিনিসের নতুন ভাবে ব্যবহারের উপর জোর দেন। )</p>					

## Appendix- F

### Parenting Style Scale

Lamborn et al. (1991)

#### PARENTAL WARMTH/INVOLVEMENT

বাংলা সংস্কৃতিতে গৃহীতঃ শঙ্কর সিং (PhD Scholar) ও ডঃ ললিত ললিতাভ মহাকুড (Associate Professor, Dept. Of Education, Jadavpur University)

#### নির্দেশনা

নিম্নে তোমার বাবার সম্পর্কে কিছু প্রশ্ন আছে, যাদের উত্তর বিভিন্ন প্রশ্ন ক্ষেত্রে বিভিন্ন দেওয়া আছে। যত্ন সহকারে বিবৃতি গুলো পড়ো এবং স্থির করো কোন উত্তরটি তোমার বাবার দিক থেকে তুমি পেয়ে থাকো। তোমার উত্তর নিচে থাকা বাক্সের মধ্যে যেটি ঠিক মনে হবে তাতে ঠিক (✓) চিহ্ন দাও।

- ১। আমার যদি কোন সমস্যা হয়, আমি সাহায্যের জন্য বাবার উপর নির্ভর করতে পারি। ( সাধারণত ঠিক / সাধারণত ভুল )
- ২। আমি যে কাজই করি, তাতে বাবা আমার সেরাটা দেওয়ার জন্য সর্বদা উৎসাহিত করেন। ( সাধারণত ঠিক / সাধারণত ভুল )
- ৩। আমার বাবা আমাকে সর্বদা স্বাধীন ভাবে চিন্তা ভাবনা করতে উৎসাহিত করেন। ( সাধারণত ঠিক / সাধারণত ভুল )
- ৪। বিদ্যালয়ের কোন কাজ বুঝতে না পারলে আমার বাবা তা বুঝতে সাহায্য করে থাকেন। ( সাধারণত ঠিক / সাধারণত ভুল )
- ৫। আমাকে দিয়ে বাবা কিছু করতে চাইলে, তা কেন করতে হবে তা বুঝিয়ে দেন। ( সাধারণত ঠিক / সাধারণত ভুল )

৬। বিদ্যালয়ের পরীক্ষায় আমার খারাপ ফলাফল হলে, আরও কঠোর পরিশ্রম করার জন্য বাবা আমায় উৎসাহিত করেন। ( কখনইনা / মাঝেমাঝে / সবসময় )

৭। বিদ্যালয়ের আমি ভালো ফলাফল করলে, বাবা আমার প্রশংসা করেন। ( কখনইনা / মাঝে মাঝে / সব সময় )

৮। আমার বাবা ভালো ভাবেই জানেন কারা আমার বন্ধু। ( জানেনা / কিছু কিছু জানে / অনেকটা জানে )

৯। আমার বাবা আমার সাথে সময় কাটান শুধুমাত্র কথা বলে। ( প্রায় সবদিনই / সপ্তাহে কিছু কিছু দিন / মাসের কিছু সময় / কখনই করেন না )

১০। আমার পরিবার এক সাথে মজাদার কিছু করেন। ( প্রায় সবদিনই / সপ্তাহে কিছু কিছু দিন / মাসের কিছু সময় / কখনই করেন না )

## PARENTAL STICKNESS/SUPERVISION

১১। বিদ্যালয় চলাকালিন একটি সাধারণ সপ্তাহে (সোমবার থেকে শুক্রবার / শনিবার ), আমি রাতে বাড়ির বাইরে থাকতে পারি- ( বাইরে যেতে অনুমতি দেয়না / ৮:০০ টার আগে / ৮:০০ টা থেকে ৮:৫৯ টা / ৯:০০ টা থেকে ৯:৫৯টা / ১০:০০ টা থেকে ১০:৫৯ টা / ১১:০০ টা বা তারপর )

১২। একটি সাধারণ সপ্তাহে শুক্রবার বা শনিবার রাতে , আমি বাড়ির বাইরে থাকতে পারি- ( বাইরে যেতে অনুমতি দেয়না / ৮:০০ টার আগে / ৮:০০ টা থেকে ৮:৫৯ টা / ৯:০০ টা থেকে ৯:৫৯টা / ১০:০০ টা থেকে ১০:৫৯ টা / ১১:০০ টা বা তারপর )

১৩। আমার বাবা সঠিক ভাবে জানেন, বিদ্যালয় ছুটি হওয়ার পর বিকেলে প্রায়শই আমি কোথায় থাকি। ( হ্যাঁ / না )

আমার বাবা আমার সম্পর্কে জানতে চেষ্টা করেন-

(ক) রাতে আমি কোথায় যাই? (একদমই চেষ্টা করেন না / সামান্য চেষ্টা করেন / অনেকটা চেষ্টা করেন)

(খ) অবশর সময় আমি কি করি? (একদমই চেষ্টা করেন না / সামান্য চেষ্টা করেন / অনেকটা চেষ্টা করেন)

(গ) বিদ্যালয় ছুটি হওয়ার পর বিকেলে প্রায়শই আমি কোথায় থাকি? (একদমই চেষ্টা করেন না / সামান্য চেষ্টা করেন / অনেকটা চেষ্টা করেন )

আমার বাবা আমার সম্পর্কে প্রকৃত অর্থে জানেন-

(ক) রাত্রে আমি কোথায় যাই? (একদমই চেষ্টা করেন না / সামান্য চেষ্টা করেন / অনেকটা চেষ্টা করেন)

(খ) অবশর সময় আমি কি করি? (একদমই চেষ্টা করেন না / সামান্য চেষ্টা করেন / অনেকটা চেষ্টা করেন)

(গ) বিদ্যালয় ছুটি হওয়ার পর বিকেলে প্রায়শই আমি কোথায় থাকি? (একদমই চেষ্টা করেন না / সামান্য চেষ্টা করেন / অনেকটা চেষ্টা করেন)

## **PARENTAL WARMTH/INVOLVEMENT**

### নির্দেশনা

নিম্নে তোমার মা সম্পর্কে কিছু প্রশ্ন আছে, যাদের উত্তর বিভিন্ন প্রশ্ন ক্ষেত্রে বিভিন্ন দেওয়া আছে। যত্ন সহকারে বিবৃতি গুলো পড়ো এবং স্থির করো কোন উত্তরটি তোমার মা-র দিক থেকে তুমি পেয়ে থাকো। তোমার উত্তর নিচে থাকা বাক্সের মধ্যে যেটি ঠিক মনে হবে তাতে ঠিক (v) চিহ্ন দাও।

১। আমার যদি কোন সমস্যা হয়, আমি সাহায্যের জন্য মা-র উপর নির্ভর করতে পারি। (সাধারণত ঠিক/সাধারণত ভুল)

২। আমি যে কাজই করি, তাতে মা আমার সেরাটা দেওয়ার জন্য সর্বদা উৎসাহিত করেন। ( সাধারণত ঠিক / সাধারণত ভুল )

৩। আমার মা আমাকে সর্বদা স্বাধীন ভাবে চিন্তা ভাবনা করতে উৎসাহিত করেন। (সাধারণত ঠিক / সাধারণত ভুল )

৪। বিদ্যালয়ের কোন কাজ বুঝতে না পারলে আমার মা তা বুঝতে সাহায্য করে থাকেন। (সাধারণত ঠিক/সাধারণত ভুল )

- ৫। আমাকে দিয়ে মা কিছু করতে চাইলে, তা কেন করতে হবে তা বুঝিয়ে দেন। (সাধারণত ঠিক/সাধারণত ভুল )
- ৬। বিদ্যালয়ের পরীক্ষায় আমার খারাপ ফলাফল হলে, আরও কঠোর পরিশ্রম করার জন্য মা আমার উৎসাহিত করেন। (কখনই না / মাঝে মাঝে / সব সময় )
- ৭। বিদ্যালয়ের আমি ভালো ফলাফল করলে, মা আমার প্রশংসা করেন। (কখনই না/মাঝে মাঝে/সব সময় )
- ৮। আমার মা ভালো ভাবেই জানেন কারা আমার বন্ধু। (জানেনা /কিছু কিছু জানে/আনেকটা জানে )
- ৯। আমার মা আমার সাথে সময় কাটান শুধুমাত্র কথা বলে। (প্রায় সবদিনই / সপ্তাহে কিছু কিছু দিন / মাসের কিছু সময় / কখনই করেননা )
- ১০। আমার পরিবার একসাথে মজাদার কিছু করেন। (প্রায় সব দিনই /সপ্তাহে কিছু কিছু দিন/ মাসের কিছু সময়/কখনই করেন না)

## **PARENTAL STICKNESS/SUPERVISION**

- ১১। বিদ্যালয় চলাকালিন একটি সাধারণ সপ্তাহে (সোমবার থেকে শুক্রবার / শনিবার), আমি রাত্রে বাড়ীর বাইরে থাকতে পারি- (বাইরে যেতে অনুমতি দেয়না/ ৮:০০ টার আগে/৮:০০ টা থেকে ৮:৫৯টা/ ৯:০০ টা থেকে ৯:৫৯টা /১০:০০ টা থেকে ১০:৫৯টা /১১:০০ টা বা তারপর )
- ১২। একটি সাধারণ সপ্তাহে শুক্রবার বা শনিবার রাত্রে , আমি বাড়ির বাইরে থাকতে পারি- (বাইরে যেতে অনুমতি দেয়না / ৮:০০ টার আগে/৮:০০ টা থেকে ৮:৫৯টা/ ৯:০০ টা থেকে ৯:৫৯টা/ ১০:০০টা থেকে ১০:৫৯টা /১১:০০ টা বা তারপর )
- ১৩। আমার মা সঠিক ভাবে জানেন, বিদ্যালয় ছুটি হওয়ার পর বিকেলে প্রায়শই আমি কোথায় থাকি। ( হ্যাঁ / না )

আমার মা আমার সম্পর্কে জানতে চেষ্টা করেন-

- (ক) রাত্রে আমি কোথায় যাই? (একদমই চেষ্টা করেন না /সামান্য চেষ্টা করেন /অনেকটা চেষ্টা করেন)

- (খ) অবশর সময় আমি কি করি? (একদমই চেষ্টা করেন না / সামান্য চেষ্টা করেন / অনেকটা চেষ্টা করেন)
- (গ) বিদ্যালয় ছুটি হওয়ার পর বিকেলে প্রায়শই আমি কোথায় থাকি? (একদমই চেষ্টা করেন না/ সামান্য চেষ্টা করেন /অনেকটা চেষ্টা করেন )

আমার মা আমার সম্পর্কে প্রকৃত অর্থে জানেন-

- (ক) রাত্রে আমি কোথায় যাই? (একদমই চেষ্টা করেন না/সামান্য চেষ্টা করেন /অনেকটা চেষ্টা করেন)
- (খ) অবশর সময় আমি কি করি? (একদমই চেষ্টা করেন না / সামান্য চেষ্টা করেন /অনেকটা চেষ্টা করেন)
- (গ) বিদ্যালয় ছুটি হওয়ার পর বিকেলে প্রায়শই আমি কোথায় থাকি? (একদমই চেষ্টা করেন না / সামান্য চেষ্টা করেন /অনেকটা চেষ্টা করেন)


## Appendix- G

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**THE ROLE OF FAMILY SUPPORT IN FOSTERING CREATIVITY AMONG SCHOOL-GOING CHILDREN: A REVIEW**

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**Abstract**

This paper aims to analyze how family influences creative development among school students. The methodology encompasses an extensive literature review, theoretical analysis, and empirical examination through case studies. Our findings reveal that family plays a vital role in students' creative development. Furthermore, different parenting styles impact students' creativity differently. Despite the promising aspects, the study identifies some family-related challenges that affect nurturing creative development. In conclusion, this research underscores some recommendations for parents to nurture their children's creativity.

**Keywords:** *Family Support; Creativity; School-Going Children*

**Introduction**

In today's knowledge-based economy, creativity plays a vital role in obtaining global competitive advantage because it is the manifestation of wisdom and knowledge of the human brain, which can transform creativity into economic value and offer people and organizations a sustained competitive advantage (Ferrari & Schoolnet, 2009; Potęga vel Żabik et al., 2021; Sternberg, 2006; Oya Taneri, 2012a; Kupers et al., 2019a). One must cope with change and positively thrive on it (Phu, 2019; Kupers et al., 2019b). Thus, creativity is deemed an invaluable asset of the human brain, a necessary human resource in the 21st century, and a powerful means to improve the quality of life because creativity allows us to imagine the world differently (Oya Taneri, 2012b; Oke et al., 2022). Thus, it is crucial for children to possess the necessary cognitive abilities to see alternative possibilities for the world and the self-assurance and drive to actively bring about those changes. In order to succeed, individuals must demonstrate the bravery to take risks and accept the possibility of failure (Newton & Newton, 2021; Dreyer et al., 1966). Creative children have the potential to work hard and find solutions to problems (Hon, 2012). As a result, the creative process is frequently focused on innovation, problem-solving, output, and worthy results (Piiro, 2011). These goals can be achieved if parents strongly support educational reforms that aim to better equip the next generation for society's challenges, such as prioritizing critical thinking skills. Emphasizing creative education is crucial for the current and future

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generations of children (Crossman, 2013). The cognitive processes involved in developing creativity are the same for everyone, but some children are more creative than others (Soh, 2015; Hamza & Griffith, 2006; Maslin et al., 2023). This difference appears to be related to their personal characteristics, experiences, knowledge, attitudes, and interests (Hondzel, 2013). Families are the primary socializing institution (Zhao & Yang, 2021). The adults around them manipulate children's tendencies; parents can enhance or impede children's creativity (Dikici, 2014; Meusburger, 2009; Wolska-Długosz, 2015).

Parental beliefs significantly impact children's creative skills (Sterling & Honig, 2000; Olszewski et al., 1987). If parents recognize their children's potential, they will contribute to developing these skills by registering them for art classes or encouraging their child's problem-solving and problem-finding labor more than usual. Creative people generally come from families where the environment is believed to be conducive to developing mental abilities (Vilarinho-Pereira et al., 2021). Parents bring up and care for their children. One of the proper roles of the parents is to provide encouragement, support, and access to the activities that enable the children to master specific tasks (Lee, 2008; Root-Bernstein, 2015). Throughout life, parents should foster their children's creativity as they are their primary educators (Cropley, 1997). The role of the family is crucial in promoting the development of children's creative thinking. Parents should cultivate their children's innate qualities and grant them emotional autonomy without imposing excessive demands or expectations (Haim & Aschauer, 2024). Parents play a crucial role in molding their children's creativity and equipping them with the necessary skills to become capable individuals in society. They can shape their children's growth and progress, similar to how a sculptor shapes clay (Wu et al., 2014; Inam et al., 2021).

Based on the preceding analysis, it is evident that creativity is an essential element of human nature, and the family's role substantially impacts a student's creative growth. Hence, it is essential to examine the diverse impact of family on kids' creativity in the contemporary day. This study provides a comprehensive overview of the multifaceted relationship between creativity and family support of school-going children. It also explores the conceptual framework of creativity, the family's role in developing students' creativity, the effects of various parenting styles on student creativity, specific family practices that foster creativity, and the barriers within families that hinder creative growth. Additionally, the paper concludes with recommendations for parents to support and enhance their children's creativity.

### **Conceptual Framework of Creativity in Children**

Aristotle identifies creativity as the sole factor that ensures human development. It is a key competency for personal and social prosperity because humans live in the creative age of information, communication, and collaboration (Nejad et al., 2015). It is a capacity to recognize something unique in daily situations and produce something new. It is an ability to think outside the traditional box and problem-solve (Lewis, 2011). Everyone has this innate ability to create something new (Romero et al., 2012). Although it involves individual differences, creativity is a skill that can be taught and learned due to its transforming nature. It is a concept that has attracted increasing attention in the profession of social work (Meusburger, 2009).

Creativity is the ability to generate, articulate, or apply inventive ideas, techniques, and perspectives (Romero et al., 2012), often in a collaborative environment (McFadzean, 2001). Along with critical thinking and problem-solving skills, which are closely related. It is a significant component of objective thinking, i.e., a non-chaotic, orderly, and organized thought process (Lewis, 2011). It is closely linked to the learner's cognitive abilities, particularly their analytical and evaluative skills (Stemberg, 2006).

According to Vygotsky, creativity arises from any human activity that creates something new (Moran & John-Steiner, 2003; Stoltz et al., 2015). It can create everything from physical objects to a new mental construct (Piske et al., 2017). Therefore, it is present when significant artistic, scientific, and technical discoveries are made. It also exists whenever a person changes, combines, or creates something new (Kaplan, 2019). Vygotsky believed that creativity exists in everyone, including very young children.

Imagination is an integral part of creativity that supports the production of new combinations of pre-constructed objects (Cole et al., 1988).

Guilford is widely recognized as the foremost specialist in creativity. According to him, intelligence consists of 120 factors, of which only 50 are currently identified (Simonton et al., 2000). These capacities relate to memory or thought, subdivided into convergent or divergent thinking (Basadur & Gelade, 2002). He established eight dimensions for divergent thinking or creativity: sensitivity to problems, new ideas, fluency, flexibility, co-existence, analysis, complexity, and evaluation. He also noted that creative thinking differs from divergent thinking (Sterling & Honig, 2000). However, inspired by Guilford's framework, Torrance defined creativity as "a process of being sensitive to problems, deficiencies, knowledge gaps, missing elements, inconsistencies, etc.; Difficulty identification; Finding solutions, guessing, or making assumptions about deficiencies (Adams, 2005; Klijn & Tomic, 2010; Benea-Popușoi & Duca, 2023), these hypotheses are tested, retested, revised, and finally communicated with the results." However, he identified four important factors:

1. **Fluency** refers to producing many ideas or alternate solutions to a problem.
2. **Originality** is the ability to generate novel ideas that differ from conventional thinking.
3. **Flexibility** is the ability to produce diverse ideas and find innovative solutions by examining problems from multiple perspectives.
4. **Elaboration** is the process of improving ideas by explaining them further. Simply put, creativity is the mental ability to generate new ideas or elaborate on existing ideas on a topic.

A playful child can quickly become creative (Chien & Hui, 2010; Yates & Twigg, 2017); Yildirim, 2010). Children can develop thinking and sensory learning through engagement with creative activities, and they should be given opportunities to engage in creativity at the early stages of education (Chien & Hui, 2010; Prieto et al., 2006; Anggraini & Yuwono, 2022). Creative activities that promote children's abilities to think about new ideas, express themselves, identify issues, and solve various problems (Dere, 2019). Activities that enhance creativity and imagination lead children to embrace divergent forms of thinking (Lilly, 2014). This can, in turn, lead to innovation through the processing of unique ideas and experiences. Creativity is present in early childhood, and it needs to be developed (Michalopoulou, 2014; Leggett, 2017). From all these points of view, engaging children in creativity is an important milestone in developing creative thinkers and innovation from childhood to adulthood. Various studies have emphasized the importance of the early childhood period in the development of creativity. This is consistent with past research on the development of children's creative imagination (Vygotsky, 1991). The development of imaginative play reaches its peak during the preschool years. Parents play a crucial role in nurturing their children's creativity by dedicating ample time to their care and education, particularly during their early childhood years. Therefore, they have an essential role in nurturing creativity in their children as they get their first knowledge from the family (Yildirim, 2010).

#### **The Role of Family in Child Development**

Family is essential in how children grow up; it affects how they think, feel, and get along with others as they grow. Parents and how they raise their kids, how the family works together, and how everyone gets along all play a big part in shaping how children turn out.

#### **General Influence of Family on Child Development**

From the moment a child is born into a family, he begins to form his early experiences and philosophy of life from his family. A healthy family environment is crucial to a child's future success as it supports his social and emotional development. This highlights the importance of parents in understanding and nurturing children's social and emotional skills (Delyana & Mudjiran, 2020). Families are the primary influencers of how children think and interact with others, and this influence remains strong as kids grow and begin school (Cancino & Mínguez, 2020). According to Bowlby's (1969) attachment theory, a caring and secure emotional bond is essential for a child's healthy emotional development. A caring and loving family provides security for children's physical needs and emotional support, increasing security and

confidence (Bowlby, 1973). Thompson (2008) emphasizes modern theories such as attachment theory, which posits that a strong early bond with caregivers leads to the development of better emotional regulation and social skills in children later in life. On the other hand, Conger and Donnellan (2007) noted in their study that family interaction and a supportive family always play a positive role in increasing the child's self-esteem and overall wellbeing. Families provide children with the first environment in which children learn or understand their emotions and learn how to control them while also playing an important role in shaping children's thoughts, feelings, and relationships (Mammadov, 2022). In order to meet the needs of children, families must urgently and effectively contribute to the formation of healthy, strong, and essential personalities (Hasanova, 2021). As children develop emotional intelligence, their families also influence their formation, emotional security, and wellbeing (Serebryakova & Dvoryantseva, 2022).

### **Overview of Parenting Styles and Their Impact**

Baumrind defined the term parenting style, which was subsequently extended by Maccoby and Martin, as the role it plays in shaping a child's behavior and emotions (Maccoby & Martin, 1983). There are four main types of parenting styles: Authoritative, Authoritarian, Permissive, and Uninvolved (Vega et al., 2022). Authoritative parenting is associated with positive outcomes such as better academic performance and fewer behavioral problems, linking warmth with reasonable expectations (Baumrind, 1991; Maccoby & Martin, 1983), rational communication, moderate control, and a focus on independence, promotes positive emotional (Vega et al., 2022; Kaci et al., 2022). On the other hand, authoritarian parenting styles and permissive styles involve strict rules and low warmth, which may lead to higher anxiety and low self-esteem in children (Baumrind, 1991), affecting children's overall wellbeing (Acencio et al., 2023). Similarly, Pinquart (2017) states that authoritarian and permissive parenting styles are associated with negative outcomes such as increased aggression and lower academic achievement in children. So, understanding parenting styles and their effects is essential for healthy child development (Zhou, 2022).

### **Family Dynamics and Child Development**

Family dynamics is how members of a family interact with each other, resolve conflicts, and express emotions. These dynamics help children's social-emotional and cognitive development. Barnett et al. (2018) highlighted in their research that the role of families with open communication and supportive relationships in developing children's emotional resilience and social skills is undeniable. On the other hand, the child has a negative or bad effect when there is a high level of conflict or inconsistent parenting (Cummings & Davies, 1994). A supportive family environment helps children develop resilience and effective coping skills by reducing the negative effects of stress and adversity (Conger & Donnellan, 2007; Cummings & Davies, 2018). Cumming and Davies (2018) reiterate dysfunctional family dynamics, characterized by conflict and neglect, which can disrupt a child's emotional and social wellbeing. A family always plays the role of a child's primary educator, instilling the child's values, beliefs, and norms (Roostin, 2018), and it presents the environment that shapes his emotional and behavioral development (Maughan, 2011). Socioeconomic status also plays an important role, with intermediate families also helping children achieve better educational outcomes through their active engagement (Joshi et al., 2019). Hasanova's (2021) study states that family support is crucial for children's overall wellbeing and future success. It is critical to understand family dynamics and implement targeted social-emotional skills, which are instrumental in promoting and developing positive affect across cultures (Clinton & La Serna Guilar., 2016). Activities such as reading and playing with children appear to predict positive outcomes in early numeracy, literacy, social emotions, love, motor, and non-task performance (Cuartas et al., 2003) and affect mobility through behaviors children learn from their parents (Rea et al., 2004). Family educational practices shape children's communication skills and self-perceptions (Prêteur et al., 1998). Poor family conditions, such as child marriage, early birth, malnutrition, and poor health, have long-lasting negative effects, highlighting the importance of a supportive environment for healthy family growth (Wodon, 2016). Positive family and supportive parenting positively influence children's cognitive, emotional, and social development.

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### **Specific Family Practices that Foster Creativity**

Family practices play a crucial role in nurturing creativity among school-going children. Encouraging imaginative play, providing access to diverse art materials, and engaging in unstructured playtime (Bucur et al., 2023) fosters children's exploration and expression of creativity. Exposing children to various publications, cultural events, and creative technologies (Ramić & Camović, 2022) enhances their creative thinking skills. Family rituals like collaborating on art projects, sharing stories, and participating in cultural celebrations create an inspiring environment that motivates children to engage in creative activities (Ramić & Camović, 2022). Moreover, supporting children's academic and extracurricular creative pursuits, acknowledging their interests, offering positive reinforcement, and maintaining a balance between academics and creativity (Susilawati & Akbar, 2023) ensure the holistic development of their artistic talents. Combining these family customs establishes a supportive and stimulating atmosphere, nurturing the artistic abilities of school-going children (Ramić & Camović, 2022).

Providing unstructured time for free play allows children to engage in imaginative scenarios, fostering their creativity (Corral et al., 2023), and offering a variety of arts and crafts materials encourages the exploration of different mediums, promoting creative expression (Bucur et al., 2023). Introducing creative challenges, such as constructing projects or devising games, nurtures imaginative thinking and a sense of accomplishment (Bilier & Vasko, 2023). These techniques boost creativity and support cognitive and emotional development, equipping children with essential academic and personal growth skills. By incorporating these strategies, educators can effectively cultivate creativity in youngsters, preparing them for future challenges and opportunities.

Providing resources and opportunities for artistic expression is paramount in nurturing creativity. Ensuring access to a wide range of books, educational materials, and learning tools inspires curiosity and broadens their horizons. Utilizing methods like the immersive approach in art education (Vuk, 2023), didactic games in elementary grades (Shahla, 2023), and interactive arts-based learning techniques (Stavridi, 2023) can significantly enhance creative thinking and problem-solving skills. Additionally, providing children with open-ended innovation tasks that encourage exploration and tinkering can boost their innovative capacity (Burdett & Ronfard, 2023). Early exposure to diverse art forms through museum trips and cultural activities, along with the promotion of innovative technologies like digital art tools and music composition software in early childhood education (Gbenga-Akanmu, 2022), can further broaden children's perspectives and stimulate their artistic curiosity. By facilitating easy access to various resources and learning aids, families can create a dynamic environment that nurtures and amplifies children's creative potential.

Family rituals and traditions play a crucial role in nurturing creativity by providing a platform for shared artistic expression, enhancing familial bonds, and fostering cultural consciousness. Engaging in extracurricular artistic activities during childhood is linked to more positive attitudes toward cultural events in adulthood, highlighting the impact of parental involvement in artistic pursuits (Váradi & Józsa, 2023). Additionally, the integration of family values and cultural practices, such as storytelling and participation in cultural celebrations, contributes to the development of imagination, narrative skills, and exposure to diverse creative practices, ultimately stimulating children's creativity and cultural awareness (Xiaoyi, 2023). Furthermore, the utilization of art in educational settings is known to enhance students' attitudes, skills, and capacity for creative learning, emphasizing the value of fostering creativity in the classroom (Pappas, 2022). Overall, family traditions and rituals create an enriching environment that helps children to explore and develop their creative potential while fostering a strong sense of cultural and familial belonging (Krastanova et al., 2022).

Encouraging creativity among school-going children is crucial for their holistic development. Children can cultivate and showcase their skills by supporting academic and extracurricular creative efforts, such as engaging in theatrical clubs, music lessons, or painting classes (Putri & Irianto, 2023). Positive reinforcement and recognition of their creative achievements boost their self-confidence and motivation to further explore their capabilities (Pappas, 2022). Striking a balance between academic responsibilities

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and creative activities is essential for a well-rounded education, fostering both intellectual growth and artistic expression (Kulboyeva, 2023). Families play a pivotal role in nurturing a creative mindset and fostering enduring creativity in children by actively endorsing academic and extracurricular creative pursuits (Pappas, 2022). This support helps children develop critical thinking, problem-solving skills, and innovation abilities, preparing them for future challenges (Kulboyeva, 2023).

### **Parenting Styles and Their Impact on Creativity**

The approach and methods caregivers use to raise and nurture children are parenting styles, which include the degree of warmth, responsiveness, control, and expectations toward their children (Sing, 2024). It is important to understand how parenting behaviors such as strictness and warmth can influence innovative thinking in children.

### **Parental Strictness/Supervision and Its Impact on Creativity**

Parental strictness or supervision can affect a child's creative abilities in various ways. Again, Sawyer's (2012) research established that a structured and supervised environment providing stability and focus is of utmost importance. It has been shown that children feel more secure when parents set clear rules and expectations and are more likely to engage in creative activities such as arts and crafts or creative projects (1996). Again, creativity can be stifled by excessive rigor, risk-taking, and exploration. Children may fear making mistakes or deviating from certain activities, which may disrupt or limit their abilities (Runco, 2004). On the one hand, independent thinking and innovation enhance an individual's problem-solving abilities, while on the other hand, excessive strictness and controlled environments suppress this autonomy (1996).

Children's creativity is frequently hampered by parental strictness and supervision. For example, Lin et al. (2023) highlight that when parents have perfectionistic hopes, it can generate a worry of failure in children, which may stifle their creativity. Similarly, overparenting, such as being excessively affected by a child's schooling, can have both positive and negative effects on their creative capabilities (Zheng et al., 2020). Çetin et al. (2022) stated that the way parents are attached to their own parents also impacts their children's creativity, demonstrating that these influences can span generations. A lack of attention and neglect from fathers, combined with genetic factors, can affect different phases of a child's creativity (Yu et al., 2020). However, Parents who balance guidance with allowing freedom for exploration influence their children's creativity (Sing et al., 2023). On the other hand, strict authoritarian parenting can stifle creative thinking and imagination, potentially limiting problem-solving skills later on (Nilufar & Gizi, 2021). Additionally, overparenting, like excessive involvement in daily life, can inhibit creativity, while parental engagement in schooling can foster it (Zheng et al., 2020). Therefore, finding a balanced approach is vital for nurturing a child's creativity effectively.

### **Parental Involvement or Warmth and Its Impact on Creativity**

Parents' love and encouragement play a very important role in children's creativity. Rus (1993) points out that when parents encourage children and make them feel that they believe in their ideas, children try new things and become confident enough to express themselves more. Amabile (1996) highlighted that when parents give positive feedback, it motivates children to believe in their creative abilities and to keep trying new things. Good parenting means giving children some freedom they need, understanding their emotional state, and giving them proper guidance. When parents can explore their children's interests and allow them to make decisions, it helps children to solve their own creative problems (Grolnick & Ryan, 1987). When parents give feedback and help refine their ideas, it helps children become better at possessing creative abilities (Sternberg & Lubart, 1999). Similarly, Sing et al. (2023) presented in their study that when parents appreciate and encourage the creative ways of their children, it makes a big difference (Sing et al., 2023). Some people think that parental over-involvement stifles creativity, but various studies show that involvement in school-related content actually helps children to be more creative, although over-involvement in everyday things may not be as helpful (Zheng et al., 2020). Also, when parents show lots of warmth and understanding, kids tend to be nicer to others and more creative,

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especially when they can control their emotions well (Yavuz et al., 2022). Again, when parents, society, and teachers support children's creativity by responding well to their ideas, it really shows how creative they feel (Zhang et al., 2022). Thus, when parents are there to show that they care and give good feedback, it really helps children to be more creative.

Different Parenting styles have a profound effect on various aspects of children's development, including their creativity. Different psychologists identified different types of parenting styles on the basis of their research findings. Each of these styles influences the overall emotional and psychological growth of children. (Kisku, 2020). Extending Baumrind's (1966) classification of parenting styles, Maccoby and Martin (1983) posit four parenting styles: authoritative, authoritarian, permissive, and neglectful. These four types of parenting styles influence children's creativity in different ways.

#### **Authoritative Parenting Style**

The authoritative parenting style combines high levels of demandingness with acceptance (Sigelman & Rider, 2014). These parents establish clear expectations for their children's behavior and provide explanations for the desired conduct (Baumrind, 1991; Darling, 1999). Authoritative parents have a close relationship with their children (Sigelman & Rider, 2014) and encourage their children's positive achievements (Fakouri et al., 2014; Rodríguez et al., 2009) and refrain from punishing them for mistakes. Studies have shown that students of authoritative parents exhibit greater creative attitudes (Kim, 2023; Lu et al., 2022). Research also highlights that authoritarian parenting, in contrast, can hinder a child's creativity by imposing strict rules and limiting imaginative thinking (Yuldasheva et al., 2021). Overall, authoritative parenting is conducive to nurturing children's creativity, emphasizing the importance of a supportive and structured parenting approach in fostering creative development in school-going children (Tiwari, 2022).

#### **Authoritarian Parenting Style**

The authoritarian parenting style involves unrealistic expectations of their children and does not provide explanations for the boundaries they set. They pay less attention to their children's needs and demands, relying more on punishment rather than engaging in discussion to address problems (Sigelman & Rider, 2014). Studies have shown that Authoritarian parenting, characterized by high demands and low responsiveness, suppresses autonomy and creativity in school-going children (Lu et al., 2022). Strict parenting styles like authoritarianism hinder the development of creative thinking in school-going children, a crucial period for imagination and creativity development (Yuldasheva et al., 2021).

#### **Permissive Parenting Style**

Permissive parents do not set clear boundaries or expectations for their children's behavior. Permissive parents are also commonly known as indulgent parents (Darling, 1999). They are kind and receptive to their children's demands, although they have minimal expectations. Permissive parents strive to fulfill their children's desires (Klein & Ballantine, 2001). Research by Watson et al. (2022) found that children with Permissive parents exhibited better activity patterns, which can contribute to enhanced creativity. Additionally, Setiyowati et al. (2019) discovered a positive correlation between productive parenting styles, which can include permissive parenting, and children's creativity development, emphasizing the importance of applying effective parenting styles for fostering creativity in children.

#### **Neglectful or Uninvolved Parenting Style**

Neglectful parents maintain emotional distance from their children and rarely provide discipline for negative behaviors (Koerner & Maki, 2004). In neglectful parenting styles, children experience feelings of rejection and loneliness and gradually develop low self-confidence (Coplan et al., 2004). Research has shown that neglectful parenting can predict malevolent creativity, leading to behaviors such as lying, playing tricks, and hurting people (Bedu-Addo et al., 2023). Additionally, paternal indifference and neglect in students' lives have been associated with lower levels of creativity (Yu et al., 2020).

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### **Family-related Challenges to Students' Creative Development**

Family support plays an important role in fostering creativity among school-going children, yet challenges and barriers exist. The effective relationship between family and school is vital in promoting academic success, especially in subjects like mathematics, where negative parental attitudes can impact children's perceptions and performance (Ramos & Fonseca, 2015). The identification and inclusion of gifted students, who often remain hidden in classrooms, is essential for providing specialized services that cater to their specific needs and foster their creativity (Piske et al., 2016).

Socioeconomic determinants have a significant impact on the provision of family support, giving rise to diverse challenges and obstacles. Challenges commonly encountered by families in providing support include financial struggles, substantial debts, limited access to public assistance, and a lack of financial literacy (Sherraden et al., 2022). The perception of family support among elderly individuals with low-income status is influenced by socioeconomic factors, such as educational attainment, marital status, and limitations in daily living activities, affecting their support perception (Reis, 2011). Individuals from lower socioeconomic backgrounds often face difficulties in engaging with research and interventions, presenting hurdles for families (Lingwood, 2020). These socioeconomic elements may impede the ability to access education, healthcare, and essential services, consequently impacting the quality and scope of family support accessible to these populations. Within the sphere of entrepreneurial endeavors, family enterprises encounter challenges like intricate bureaucratic processes and restricted information access, which affect their utilization of support mechanisms (Domańska & Zajkowski, 2022). In the realm of mental healthcare, family members involved in the care of individuals with chronic mental disorders encounter obstacles in obtaining timely and suitable services as they confront stigma, bias, and a deficiency in mental health assistance (Khan et al., 2022 & Dehbozorgi et al., 2022). Structural, cultural, and economic barriers within mental healthcare systems contribute to a treatment gap, placing caregiving responsibilities on families and diminishing their overall quality of life (Carbonell et al., 2020). Refugee families establishing themselves in new nations encounter difficulties related to trauma, cultural adaptations, language barriers, employment opportunities, healthcare access, education, and housing (Saunders et al., 2017). It is imperative to comprehend and tackle these socioeconomic factors to devise efficient family support interventions across diverse domains and enhance overall wellbeing.

Cultural variances are known to play a significant role in shaping parenting styles and their influence on the creativity of children. Various studies have shown that the endorsement of parental acceptance and autonomy support can have a positive impact on children's creativity (Jankowska & Gralewski, 2022; Krumm et al., 2013). Conversely, a lack of discipline and excessive control can impede the creative process (Krumm et al., 2013). Chinese parenting, rooted in Confucian ideologies, tends to prioritize academic achievement over nurturing creativity, in contrast to American parenting, which emphasizes the cultivation of individual interests to foster creativity (Kim & Hua, 2019). Recent research has highlighted that parental behaviors such as autonomy support and behavioral control can significantly boost the creativity of Chinese adolescents, with autonomy support and behavioral control playing a pivotal role in fostering creativity through autonomous motivation (Chen et al., 2021). An investigation involving university students from various regions revealed the crucial role of parental responsiveness in nurturing students' motivation and creative accomplishments across different cultural contexts, thereby emphasizing the significance of parental involvement in fostering creativity (Zhang, 2021). Studies conducted in Taiwan have shown that despite facing lower socioeconomic status, young adolescents from binational families tend to outperform monocultural families in creativity assessments, indicating a positive correlation between multicultural exposure and creativity (Chang et al., 2015; Chang et al., 2014). Montagu (1974) emphasizes the importance of cultural backgrounds that value achievement, offer encouragement, and create conducive societal conditions for learning as crucial factors in stimulating creativity among individuals from diverse cultural backgrounds (Bruch, 1975). Additionally, the gender of parents can also impact the association between parenting styles and children's creativity, with mothers often displaying higher levels of acceptance towards their children compared to fathers (Jankowska & Gralewski, 2022). It is imperative to comprehend these cultural disparities in parenting approaches to gain

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insight into their role in shaping children's levels of creativity and academic accomplishments. These findings underscore the intricate connection between cultural parenting practices and creative outcomes.

Research indicates that an excess of parental involvement or pressure may have adverse effects on the cultivation of creativity in children attending school. Studies have shown that parental engagement in education can positively influence children's outcomes (Zheng et al., 2020 & Li et al., 2023). Excessive parental involvement, also known as overparenting, can negatively impact children's academic and psychosocial growth (Wong et al., 2018), leading to diminishing returns, especially concerning internalizing issues (Li et al., 2023). Over-engagement by parents, characterized by an abundance of control and guidance, has been associated with decreased levels of self-regulation and executive function skills in children, thereby restricting opportunities for autonomous practice and growth (Obradović et al., 2021). While parental involvement is generally advantageous for children's motivation and learning when it is supportive of autonomy and positive (Grolnick & Pomerantz, 2022), it can have detrimental effects when it transitions into a controlling behavior that negatively impacts the child, particularly in demanding situations such as completing homework assignments (Grolnick & Pomerantz, 2022). Hence, it is essential to balance providing support and allowing autonomy to nurture creativity and overall development in school-aged children.

#### **Recommendations for Parents**

Parents play a significant role in nurturing a child's creativity by creating a supportive and empathetic environment. Encourage autonomy, provide opportunities for exploration, and avoid authoritarian parenting to nurture children's creativity during school life (Yuldasheva et al., 2021). They can foster creative thinking by maintaining a creatively minded home that encourages innovative behavior in both themselves and their children (Smith, 2017). Celebrate their achievements and provide constructive feedback that helps them learn and grow without discouraging their efforts. Utilizing tools like the Parental Creativity Nurturing Behavior (PCNB) scale can help parents monitor and enhance their creativity, contributing significantly to their child's creative potential (Sharma et al., 2021). Additionally, parents should pay attention to children's scenarios and provide opportunities for diverse indicators of creativity, thus promoting their creative development (Lau et al., 2023). Active parental involvement in children's education and learning processes and effective two-way communication can further enhance children's creativity and overall academic achievement (Suparmi et al., 2018). Parents can effectively nurture and develop their child's creativity by prioritizing creativity, building a supportive environment, and actively engaging in their child's creative journey.

#### **Conclusion**

The relationship between family support and the development of creativity in school-going children is important yet underappreciated. Creativity in children, a multifaceted construct with the ability to generate useful and novel ideas, is nurtured through a supportive environment that encourages exploration, risk-taking, and expression of original thought. Families play an important role in this process. Provides the foundation to explore their potential, develop confidence, and pursue creative endeavors through emotional support, encouragement, and validation. Specific family practices such as creating a stimulating home environment, engaging in open-ended play, encouraging curiosity, and exposing children to a variety of experiences are particularly effective in fostering creativity. Authoritative parenting, characterized by high warmth and high expectations, is most conducive to creativity, balanced guidance, and independence, while authoritarian, permissive, and neglectful parenting styles can hinder creative development. Despite this potential, challenges such as social pressure, limited access to resources, lack of parental awareness, and cultural attitudes can create barriers to academic achievement. To overcome these challenges, parents and educators should collaborate and adopt a holistic approach by integrating creative activities into daily routines, providing positive reinforcement, and incorporating creative thinking into the curriculum. Regular communication and shared strategies between parents and teachers can further support children's creative development. Thus, the role of family support in fostering creativity is multidimensional and vital, requiring a collaborative effort between

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home and school to nurture and develop children's creative potential, ultimately creating a generation of innovative thinkers capable of dealing with modern complexities.

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## Appendix- H1

### Paper Presentation Certificate-1



THE 1ST GLOBAL E-CONFERENCE ON EDUCATION-2020 | KOLKATA  
*Theme: "Human Cognition in Learning: An Educational Perspective"*

**CERTIFICATE OF PARTICIPATION**

**MR. KALYAN GHORAI**

of BELDA COLLEGE, has participated and presented a paper entitled "Effect of story-telling method on content based creativity of primary school children" in the 1<sup>st</sup> Global E-Conference on Education-2020, Kolkata, India" on the theme "Human Cognition in Learning: An Educational Perspective", organized by the Department of Education, Jadavpur University, Kolkata, India and the Department of Education, Dinabandhu Mahavidyalaya, Bongaon, North 24 Parganas, West Bengal, India on August 22-23, 2020.



			
DR. MUKTIPADA SINHA Head, Department of Education Jadavpur University	DR. LALIT LALITAV MOHAKUD CONVENER, GECE-2020 KOLKATA	SMT. BISWAJITA MOHANTY CONVENER, GECE-2020 KOLKATA	DR. BISWAJIT GHOSH Principal, Dinabandhu Mahavidyalaya

## Appendix- H2

### Paper Presentation Certificate-2

Reference No.: BC/EDU/IC/TILSECC-2024/TP-67  
Date of Issue: 9th August, 2024

Participation & Presentation  
**Certificate**

This is certify that

*Kalyan Ghorai*

She/he is the **Ph.D. Research Scholar, Dept. of Education, Jadavpur University**, has participated and presented his/her paper entitled "**The Influence of School Support on students' Creativity**" in two days international conference on "Technology and Its Impact on Language, Society, Education, and Climate Change" held on 8th & 9th august 2024, jointly organized by departments of education, sociology, and santali, Belda College, Paschim Medinipur, West Bengal, India.

			
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### **Similarity Report**

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