Creative Problem-Solving Ability and Educational Wellbeing among School-going Adolescents: The Mediating Effects of Self-Efficacy and Spiritual Practices

The Thesis Submitted to
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Dedicated to my Beloved

Parents

Mr. Madan Mohan Ghorai

&

Smt. Rekha Rani Ghorai

CERTIFICATE

Certified that the thesis entitled, "**Creative Problem-Solving Ability and Educational Wellbeing among School-going Adolescents: The Mediating Effects of Self-Efficacy and Spiritual Practices**", 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 that neither this thesis nor any part of it has been submitted before for any degree or diploma anywhere/elsewhere.

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Place: Jadavpur

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ABBREVIATIONS USED

ANOVA	Analysis of Variance
CPSA	Creative Problem-Solving Ability
EW	Educational Wellbeing
df	Degrees of Freedom
EFA	Exploratory Factor Analysis
F	F-Ratio (ANOVA)
GPA	Grade Point Average
H.S	Higher Secondary
i.e.	That is
Ku	Kurtosis
M	Mean
MD	Mean Difference
N	Total Number of Participants
NCERT	National Council for Educational Research and Training
NEP	New Education Policy
NS	Not Significant
P	Probability Value
RAC	Research Advisory Committee
R	Multiple Correlation
R^2	Regression Value
S	Significant
SD	Standard Deviation

SEM	Standard Error of Mean
SES	Self-efficacy
Sig.	Significance
Sk	Skewness
SP	Spiritual Practices
SPSS	Statistical Package for the Social Sciences
Std. Error	Standard Error
t	t-statistic
WBCHSE	West Bengal Council of Higher Secondary Education
WHO	World Health Organisation
XI	Grade XI
XII	Grade XII

PREFACE

This study has been submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy at Jadavpur University. The present research work has been completed with profound satisfaction and a strong sense of academic accomplishment. Throughout the study, all essential and relevant information has been compiled to provide a comprehensive, systematic, and insightful examination of the research problem.

In the preparation of this thesis, emphasis has been placed on clarity, coherence, and logical organisation to ensure that the research is presented in an academically rigorous yet comprehensible manner. Each section has been carefully structured to explain the concepts thoroughly and systematically. To facilitate a better understanding of complex ideas, relevant diagrams and illustrations have been incorporated wherever necessary to enhance clarity and interpretation.

The research has been conducted under the esteemed supervision of Dr. Lalit Lalitav Mohakud, Associate Professor, Department of Education, Jadavpur University. Continuous academic guidance, constructive feedback, and moral support have been provided throughout the study, enabling the successful completion of the research within the stipulated time. Valuable suggestions regarding the research design, methodology, and conceptual framework have been offered, significantly contributing to the study's quality and direction.

During the course of the investigation, numerous academic challenges have been encountered, each of which has contributed meaningfully to scholarly and personal development. Extensive consultation of books, research journals, and other authentic sources has been undertaken to ensure that the study has been conducted in a methodologically sound manner and supported by credible evidence.

In the present study, the influence of selected socio-demographic and educational variables on the creative problem-solving ability, educational wellbeing, self-efficacy, and spiritual practices of school-going adolescents (Grades XI–XII) has been examined. The interrelationships among these variables have been explored, along with the influence of creative problem-solving ability, self-efficacy, and spiritual practices on educational wellbeing. Furthermore, the mediating roles of self-efficacy and spiritual practices in the relationship between creative problem-solving ability and educational wellbeing have been analysed. For systematic presentation and ease of comprehension, the study is

organised into six chapters. In Chapter I, Introduction, the conceptual and theoretical foundations of the significant variables have been discussed, and their interlinkages have been established. Chapter II, Review of Related Literature, presents a critical synthesis of relevant prior studies. Chapter III, Statement of the Problem, has outlined the rationale, objectives, hypotheses, and delimitations of the study. Chapter IV, Methodology of the Study, describes the research design, locale, participants, variables, tools, procedures for data collection and analysis, and ethical considerations. In Chapter V, Analysis and Interpretation of Data, the results of the statistical analyses have been presented and interpreted. Finally, in Chapter VI, Major Findings and Conclusions, the significant findings have been summarized and discussed in the light of earlier research, along with the educational implications, limitations of the study, and suggestions for future research.

In conclusion, this thesis has been completed as the culmination of sustained scholarly effort and academic dedication, supported by continuous guidance and institutional encouragement. It is hoped that the findings and insights generated through this research will contribute meaningfully to the field of education and provide valuable directions for future scholarly inquiry.

Bikash Chandra Ghorai
(Research Scholar)

ABSTRACT

This study investigates the creative problem-solving ability (CPSA) and educational wellbeing (EW) of school-going adolescents, focusing on the mediating effects of self-efficacy (SE) and spiritual practices (SP). The study aims to evaluate CPSA, SE, SP, and EW levels among school adolescents and analyse how these variables differ by gender, family type, siblings, education stream, study hours, and parents' education. It also examines the relationships among CPSA, SE, SP, and EW, as well as the combined effects of SE and SP on these outcomes. Additionally, it explores how SE, SP, and CPSA together predict EW and investigates their mediating roles in the relationship between CPSA and EW. The present study was a quantitative, descriptive, survey-based research with a cross-sectional design. In this study, both multistage convenience sampling and simple random sampling were used to collect data from 720 higher secondary schools in the Purba and Paschim Medinipur districts of West Bengal. Data were collected by administering a Participant's demographic profile, the 'Psssi-Usha Test of Creative Problem-Solving' developed by B. K. Passi and Dr Usha Kumar (2015); the 'Self-Efficacy Scale' developed by Dr Arun Kumar Singh and Dr Shruti Narain (2014); the 'Spiritual Practices Scale' developed by Prof. Dr. med. Arndt Büssing et al. (2005), and the 'Educational Wellbeing Scale' developed by B.C. Ghorai and L.L. Mohakud. The collected data were analysed using descriptive statistics and parametric techniques such as t-tests, ANOVA, Pearson correlation, Regression, and mediation analyses using SPSS-21. Results showed that most school-going adolescents scored below average in CPSA, while EW, SE, and SP were generally at average or high levels. Significant variations in CPSA were observed concerning gender, number of siblings, stream of education, study hours, and fathers' educational qualifications. Differences in EW were significant regarding gender, study hours, and mothers' education. Variations in SE were notable with family type, number of siblings, stream of education, study hours, and parental education, while SP differences related to gender, study hours, and mothers' educational level. Correlation analysis indicated a low-to-moderate positive relationship between CPSA and SE, SP, and EW. Regression results confirmed that CPSA, SE, and SP are important predictors of EW. Mediation analyses showed that the link between CPSA and EW is mediated through SE, but not through SP; both mediating effects were significant. The study highlights the crucial role of SE in enhancing EW and underscores the importance of integrating cognitive, psychological, and spiritual elements in education for adolescent development.

CHAPTER-I
INTRODUCTION

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1.0. Introduction

In today's educational landscape, there is a growing emphasis on holistic development among learners, with a focus on nurturing creative abilities, psychological wellbeing, and inner strengths. In this context, creative problem-solving ability (CPSA) is recognised as an essential skill of the 21st century, vital for managing uncertainty, developing innovative ideas, and approaching complex situations with cognitive flexibility (Treffinger et al., 2006). CPS abilities are more adaptable, confident, and better prepared to manage academic and psychosocial stressors (Torrance, 1974; Zsolnai & Kasik, 2014). Students with higher CPSA tend to demonstrate better academic performance, emotional competence, and independence in learning (Basadur et al., 2000; Scott et al., 2004). It is enhanced by consistent spiritual practice (SP), which can enhance awareness and intuition, helping individuals face challenges with clarity, openness, and inner harmony, thereby shaping adolescent cognition and emotional health. Rooted in both religious and secular traditions, spiritual practices such as meditation, mindfulness, prayer, yoga, and moral reflection foster inner awareness, ethical guidance, and emotional regulation (Pargament, 1997; Wong, 2016). It is linked to reduced stress, increased academic motivation, and stronger school connectedness (King & Boyatzis, 2004; Holder et al., 2010). It serves as a resource for emotional regulation, ethical reasoning, and resilience-building among youth (King & Benson, 2006). Participating in SP can boost CPSA by encouraging deeper reflection and intuition, ultimately improving students' educational wellbeing (EW). EW is a crucial element affecting motivation, persistence, and lifelong learning, described as a multidimensional state of emotional, academic, social, and psychological well-being within the learning environment (Ryff & Singer, 2008; Waters, 2011; Ryff & Keyes, 1995). It is a vital indicator of quality education, where high EW in adolescents is linked to greater school engagement, lower dropout rates, better peer relationships, and a more positive outlook (Pollard & Lee, 2003; OECD, 2018). However, self-efficacy enhances the benefits of creative ability and spiritual practices, allowing learners to face challenges confidently and thereby boosting their overall EW. It is acting

as a mediator between cognitive competencies and achievement outcomes, and self-efficacy supports resilience and emotional maturity (Zimmerman, 2000). Similarly, spiritual practice provides adolescents with a sense of identity, purpose, and moral direction (Holder et al., 2010; Lerner et al., 2013). In alignment with these perspectives, the National Education Policy (NEP) 2020 emphasises creativity, self-efficacy, and holistic wellbeing within an education system grounded in the Indian ethos and global relevance. Furthermore, Indian studies have examined adolescent development through yogic practices (Raina, 2012), value education (Parihar & Yadav, 2016), spiritual intelligence (Pandey, 2020), and self-efficacy beliefs, highlighting their role in academic resilience and emotional development (Sharma & Kaur, 2014). However, integrative research linking creativity, self-efficacy, spirituality, and wellbeing remain limited. The Indian schooling system continues to struggle with rigid curricula, exam-oriented learning, and emotional neglect (NCERT, 2017), while adolescents face increasing academic pressure, digital distractions, identity conflicts, and socio-cultural challenges (Kumar, 2020). Although spirituality is recognised as an indigenous coping resource in Indian psychology (Paranjpe, 1998), it is rarely empirically integrated with creativity and wellbeing. This study aims to address the gap between theory and practice by examining how Creative Problem-Solving Ability (CPSA) affects Educational Wellbeing (EW) in school adolescents in India, focusing on the mediating roles of Self-Efficacy (SE) and Spiritual Practices (SP). By adopting a culturally sensitive and developmentally grounded approach, this research aims to contribute to both global discourse and local policy on holistic education.

1.1. School-going Adolescents: Developmental Characteristics and Challenges

School-going adolescents, typically aged between 13 and 18 years, form a dynamic and transitional group positioned between childhood and adulthood. This stage, known as adolescence, is recognised as a period of “storm and stress” (Hall, 1904) and is characterised by rapid physical, emotional, cognitive, and social changes. In the Indian context, these adolescents often experience this development within the highly structured and competitive environment of secondary and higher secondary education systems. According to the UNICEF (2019) report, India has the world's largest adolescent population, exceeding 250 million, with a significant number attending formal education.

Their educational journey is influenced not only by academic goals but also by developmental pressures, socio-cultural expectations, and institutional limitations. However, they have specific developmental characteristics that are consistent with those of school-going adolescents.

Adolescence is a vital developmental stage characterised by rapid, interconnected changes across cognitive, emotional, social, and moral-spiritual domains. Cognitively, teenagers usually reach the formal operational stage, as described by Jean Piaget, around ages 11 or 12. In this stage, they develop the ability to engage in abstract thinking, logical reasoning, hypothetical deductive problem-solving, and metacognitive reflection (Piaget, 1972). These sophisticated cognitive skills allow adolescents to analyse complex issues, view situations from multiple angles, tackle moral questions, and plan for future academic and life ambitions. This cognitive development also lays the groundwork for creative problem-solving, helping adolescents move beyond straightforward information to envision alternative options and innovative ideas.

Adolescence is marked by increased self-awareness, self-efficacy, emotional sensitivity, and mood swings, mainly due to hormonal shifts. Erikson (1968) described this stage as a conflict between identity and role confusion, in which teenagers explore their personal values, beliefs, gender roles, and career goals to form a clear sense of self. At the same time, their emotional regulation skills are still developing, which can lead to internal conflicts, stress, or anxiety, especially when personal or social expectations are not met. Therefore, emotional maturity, self-efficacy and self-control are vital for effectively managing academic stress and social relationships.

Peer interactions and the growing wish for independence from parents heavily influence adolescents' social development. As teenagers seek acceptance, status, and belonging, peer influence becomes more prominent. According to Vygotsky’s socio-cultural theory, learning and identity development during this period are seen as processes driven by social interactions and shared experiences. Consequently, peer relationships are essential in shaping adolescents’ attitudes, behaviours, and motivation for academics. In this setting, the school serves as a key environment for social learning, teamwork, and social comparison.

Moral and spiritual growth typically intensifies during adolescence, highlighting adolescents’ expanding capacity for abstract and reflective thinking. According to

Kohlberg's moral development theory, many adolescents shift from a conventional level of moral reasoning focused on conformity and social approval to a post-conventional level that upholds universal ethical principles such as justice, equality, and human rights (Kohlberg, 1981). Alongside moral reasoning, adolescents also increasingly explore existential questions about meaning, purpose, and spiritual identity. In culturally diverse countries like India, where religious and spiritual traditions are deeply woven into daily life, these reflections can significantly influence ethical choices, personal resilience, and overall emotional health (King & Benson, 2006).

Despite these developmental potentials, school-going adolescents face significant challenges that hinder their holistic growth. Academic pressure is perhaps the most pervasive, driven by high-stakes examinations, parental expectations, and intense competition for limited higher education opportunities (NCERT, 2017). Social comparison and peer pressure further worsen feelings of inadequacy or exclusion, especially in an era dominated by social media. These social media platforms increase anxiety and lower self-efficacy among adolescents (Twenge et al., 2017), who constantly assess their self-image in relation to others and their wellbeing. However, school-going adolescents face numerous challenges such as emotional instability, anxiety, depression, irritability, or withdrawal. For example, excessive screen time, reduced attention spans, and addictive use of mobile games or apps impair academic focus and social interactions (Gentile et al., 2011). This trend may also reduce time spent on reflective activities such as reading, prayer, or creative pursuits. Another issue is the lack of structured opportunities for creative thinking and spiritual growth in mainstream curricula. The Indian education system continues to emphasise rote learning and memorisation, offering limited scope for experiential learning or psychological-spiritual development.

1.2. Creative Problem-Solving Ability

In an era of rapid tech advances, socio-political issues, and information overload, creative problem-solving ability (CPSA) is vital for personal and professional success, which enables individuals to handle uncertainty, think flexibly, and craft innovative solutions to complex real-world problems. The OECD (2018) emphasises CPSA as a key "21st-century ability" crucial for success in changing, unpredictable environments. CPSA is important, extending beyond workplaces to education, where students must handle open-ended problems, adapt to different learning situations, and meet society's changing needs.

In this context, CPSA fosters deeper learning, critical thinking, and learner independence. As a result, it not only enhances academic success but also serves as a crucial life skill, supporting adaptability, resilience, and long-term wellbeing.

CPSA refers to an individual's capacity to produce original, effective, and appropriate solutions to unfamiliar or complex problems by blending cognitive flexibility with innovative thinking. The concept originates from Guilford's (1950) divergent thinking model, which emphasised generating multiple original ideas. Building on this foundation, Osborn and Parnes (1977) developed structured CPSA frameworks that treat problem-solving as a sequential process, with steps such as problem identification, idea generation, and solution execution. Later, Isaksen and Treffinger (1985) further expanded the concept, highlighting that CPSA is not an innate talent but a teachable, systematic method that involves balancing divergent and convergent thinking. However, CPSA is linked to positive academic and psychological outcomes, including improved academic achievement, adaptability, emotional regulation, and resilience (Basadur et al., 2000; Treffinger et al., 2006). In educational settings, students with stronger CPSA tend to be more engaged in class, collaborate more effectively, and be more willing to try new things (Scott, Leritz, & Mumford, 2004). Recently, the development of CPSA among adolescents has enhanced metacognitive awareness and decision-making skills, helping learners navigate uncertainty, complexity, and change in rapidly evolving environments (Kuo et al., 2019). Therefore, CPSA plays a crucial role in 21st-century education by combining creativity, critical thinking, and problem-solving within a dynamic developmental framework. From a process perspective, CPSA is seen as a cognitive and emotional process in which individuals identify and develop innovative, practical solutions for ill-structured problems (Isaksen, Dorval, & Treffinger, 2011). It involves combining divergent thinking, which generates a wide range of original ideas, with convergent thinking, which evaluates, selects, and applies the best solutions. Consequently, CPSA integrates elements of creativity with a structured approach to reasoning and action.

The main components of CPSA generally include problem identification, idea generation, idea evaluation, and solution implementation. Recognising the problem and understanding its nature and constraints is part of problem identification. Idea generation employs creative and flexible thinking techniques to generate a variety of potential solutions. Idea evaluation involves critically assessing these ideas for feasibility and

value, while solution implementation focuses on transforming selected ideas into concrete actions and analysing the outcomes. These elements form the foundation of well-known CPS models, such as the Osborn Parnes Creative Problem-Solving Model, which offers a structured yet adaptable framework for systematically generating and applying ideas.

1.3. Educational Wellbeing

Educational wellbeing (EW) is recognised as vital for student development and success, especially in 21st-century learning, extending beyond academics to include students' emotional, psychological, social, and moral engagement (OECD, 2017). EW is considered not just a positive outcome but a vital foundation for academic achievement, mental health, and lifelong learning (OECD, 2015; Seligman et al., 2009). EW captures how students experience their learning spaces in terms of safety, support, inclusion, personal development, and overall satisfaction, making it an essential indicator of successful educational results. However, EW is seen as a multidimensional concept that reflects the overall sense of fulfilment within the school environment. Based on the eudaimonic approach to wellbeing (Ryff & Keyes, 1995) and aligned with the positive education movement (Seligman et al., 2009), EW encompasses the emotional, psychological, academic, and social aspects of student life. Pollard and Lee (2003) point out that EW involves satisfaction with learning, a sense of belonging, ongoing engagement, and perceived purpose in academic pursuits. The OECD (2018) also recognises EW as a fundamental part of learner development, underscoring its importance in promoting sustained motivation, resilience, and responsible citizenship.

Increasing empirical evidence shows that higher EW correlates with positive academic and psychosocial outcomes. Students with strong EW often demonstrate greater engagement in school (Jenkins, 2006), healthier relationships with peers (Wentzel, 1997), and reduced academic stress and dropout intentions (Danielsen et al., 2009). Schools focusing on wellbeing tend to foster resilient, confident, and socially skilled learners who can adapt to various life challenges (Waters, 2011). These insights highlight the necessity of integrating wellbeing into daily educational practices rather than viewing it as a secondary issue. Furthermore, in the Indian context, the significance of EW is particularly pronounced due to persistent academic pressure, socio-economic disparities, and the dominance of rigid, examination-oriented pedagogies. Research indicates that EW among Indian students is closely linked to value-based education, spiritual connectedness, and

supportive teacher–student relationships (Singh & Misra, 2013; Dubey & Rani, 2019). Despite its importance, EW remains relatively under-theorised and under-emphasised in Indian schooling, where academic outcomes often overshadow emotional and psychological health. Consequently, scholars advocate integrating wellbeing indicators into school evaluation frameworks to ensure more equitable, meaningful, and humane education (Kumar & Mehta, 2020).

EW can be understood through several interconnected dimensions that reflect both personal experiences and objective school conditions. The core dimensions of educational wellbeing, as summarised from the literature (Konu & Rimpelä, 2002; Furlong et al., 2014), include: Academic Satisfaction, feeling, content and motivation in learning tasks. School Engagement active participation and cognitive/emotional involvement in school life. Positive Relationships supported interactions with teachers and peers. Emotional Safety and Belongingness are a sense of inclusion, respect, and identity within school. The purpose and growth aspect emphasises that education helps individuals achieve personal and future goals. These aspects underline that education should do more than build cognitive abilities; it should also foster emotional, social, and moral development, allowing students to thrive.

1.4. Self-Efficacy

Self-efficacy (SE), a core idea in educational psychology, significantly influences motivation, learning, and achievement. Introduced by Albert Bandura (1997), it describes one's belief in their capacity to perform the actions needed to reach specific goals. In academic settings, self-efficacy influences how students view challenges, approach tasks, and keep going despite setbacks. Research consistently indicates that students with high self-efficacy tend to be more motivated, actively participate, and achieve better academically (Pajares, 1996; Schunk & DiBenedetto, 2020). It is not just a predictor of success but also a vital internal resource that interacts with emotional resilience and cognitive effort, making it essential in today's demanding educational environments.

Self-efficacy, an essential element of Albert Bandura's Social Cognitive Theory (1977), describes a person's confidence in their capacity to carry out tasks and reach goals in specific situations. It serves as a significant cognitive-motivational driver influencing how individuals think, feel, and behave. In educational settings, self-efficacy significantly

affects students' learning strategies, persistence, and emotional responses to obstacles (Schunk & Pajares, 2002). Students who possess high self-efficacy tend to set mastery goals, recover from setbacks more easily, and engage actively in their learning (Zimmerman, 2000). Academic self-efficacy is a consistent predictor of success and psychological wellbeing across various ages and cultures (Honicke & Broadbent, 2016). In India, studies by Sharma and Kaur (2014) and Singh & Udainiya (2009) discovered that self-efficacy correlates positively with academic adjustment, emotional maturity, and mental health among adolescents. Therefore, self-efficacy is more than just a trait; it is a dynamic, context-dependent belief system that links cognitive skills, such as problem-solving, to outcomes such as EW.

Self-efficacy is a specific construct related to tasks and particular domains, distinct from general self-esteem or confidence. According to Bandura (1997), efficacy beliefs are context-dependent and differ across situations, primarily influenced by four sources: mastery experiences, vicarious learning, social persuasion, and emotional arousal. In the adolescent academic environment, self-efficacy can be categorised into several dimensions: academic self-efficacy, which refers to confidence in learning and academic success; social self-efficacy, the trust in engaging with peers and managing social relationships; and emotional self-efficacy, the ability to regulate emotions and cope with stress or academic pressures (Bandura et al., 2003). These dimensions collectively foster educational development and influence how adolescents relate to their school, peers, and self-perception.

1.5. Spiritual Practices

Spiritual practices (SP) are becoming increasingly important in adolescent growth, mainly as they help buffer against stress, anxiety, and existential doubts. Globally, spirituality is increasingly seen as a protective factor that boosts psychological resilience, emotional regulation, and prosocial behaviours (Lerner et al., 2003; Holder et al., 2010). During adolescence, a time of identity development and moral exploration, teens often seek answers about meaning, belonging, and purpose, areas closely tied to spiritual exploration. Research indicates that engaging in spiritual activities is associated with reduced depression, greater life satisfaction, and improved coping skills during this stage (Wong et al., 2006; King & Roeser, 2009). In school contexts, spiritual practices can foster

calmness, empathy, ethical reasoning, and a stronger sense of community, which, in turn, support EW and academic adjustment (Tirri & Nokelainen, 2011).

SP encompasses a range of intentional practices, including prayer, meditation, mindfulness, chanting, yoga, moral reflection, and rituals. These activities are designed to cultivate inner peace, self-awareness, moral values, and a sense of connection to a higher purpose or transcendent reality. These practices are not limited to religious doctrine but often serve as personal and psychological tools that promote emotional regulation, resilience, and meaning-making, especially among adolescents (Pargament, 1997; Wong, 2016). In educational settings, research indicates that students who regularly practice spirituality show higher EW, lower stress and anxiety, and increased academic motivation (Holder et al., 2010; King & Boyatzis, 2004). SP also support identity formation and moral growth by encouraging values such as empathy, gratitude, and forgiveness (Astin et al., 2011). In the Indian context, spiritual traditions, such as yoga, dhyana (meditation), and moral education, are incorporated into school curricula and have been empirically associated with better academic adjustment, emotional maturity, and self-discipline among adolescents (Raina, 2012; Pandey, 2020). Therefore, SP functions as a mediating and protective factor, boosting students' ability to handle academic stress and significantly contributing to their overall EW.

SP involve deliberate actions or rituals that promote inner reflection, ethical awareness, transcendence, or a connection to a higher purpose or reality. These practices can be religious or secular, and can be performed individually or collectively. Examples include prayer, meditation, mindfulness, scriptural reading, chanting, acts of compassion, gratitude journaling, and participating in community rituals (King & Benson, 2006). During adolescence, spirituality is often not tied to formal religion but manifests as a personal quest for meaning, self-transcendence, and moral understanding (Fowler, 1981; Roehlkepartain et al., 2006).

According to King and Boyatzis (2004), adolescents' spiritual practices can be understood through four main dimensions: Cognitive contemplation of existential questions and beliefs about life and purpose; Behavioural regular rituals, prayers, practices, or moral actions; Emotional-Affective feelings of connection, compassion, inner peace, or awe; and social participation in faith communities or altruistic activities. These aspects collectively influence adolescents' worldview, decision-making, and ability to manage

challenges. Additionally, spiritual activities can boost metacognitive awareness, improving problem-solving and decision-making skills necessary for academic and social success. Rituals such as meditation or mindfulness help adolescents develop attentional control, self-regulation, and empathy, which directly support their educational wellbeing (Roeser & Zelazo, 2012).

1.6. Theoretical Perspectives

This theoretical framework explains the existing theories of CPSA, EW, SE, and SP that significantly contribute to the present study. A brief description of the relevance of these theories is presented in the following section.

1.6.1. Theoretical Perspectives of Creative Problem-Solving Ability

Torrance's Theory of Creativity (1974)

Torrance's (1974) Theory of Creativity views creativity as an active process that involves recognising problems, developing hypotheses, testing ideas, and sharing findings. He views creativity as a skill that can be cultivated through education, expanding divergent thinking and providing a practical model for evaluating and fostering creativity in children and adolescents (Torrance, 1987). A key aspect is four components: fluency, flexibility, originality, and elaboration (Torrance, 2017). Fluency involves generating numerous ideas, while flexibility is about changing perspectives. Originality focuses on developing unique ideas, and elaboration entails adding details to refine concepts. These measure idea quantity and innovativeness. Torrance stressed environmental and motivational factors, believing supportive, open, and safe spaces promote risk-taking, curiosity, and imagination (Torrance, 2017). Teachers play a vital role by recognising responses, encouraging questions, and enabling multiple solutions. Overall, his theory emphasises that creativity can be developed through targeted teaching strategies (Torrance, 1987).

Osborn-Parnes Creative Problem-Solving (CPS) Model

The Osborn-Parnes Creative Problem-Solving (CPS) Model is a recognised and organised method that views creativity as a structured and teachable process. Developed by Alex Osborn and further refined by Sidney Parnes, it views creativity not as a sudden insight or innate talent, but as a conscious sequence of cognitive steps guiding individuals from identifying a problem to applying effective solutions (Osborn & Parnes, 1977). The

Osborn-Parnes model centres on combining divergent and convergent thinking. Divergent thinking aims to generate many novel ideas without quick judgment, whereas convergent thinking assesses and refines these ideas to identify the best solutions (Lee et al., 2023). The model generally includes key stages: identifying or fact-finding the problem, defining it, generating ideas, evaluating those ideas, and implementing solutions. This flexible framework fosters creativity while ensuring a logical process. In educational environments, the Osborn-Parnes CPS Model is extensively used to develop students' creative problem-solving abilities (Lee et al., 2023). It helps learners systematically explore problems and reflect on their approach, which improves cognitive flexibility, teamwork, and confidence in solving issues. Notably, the model endorses the view that creativity is a skill that can be developed and enhanced with practice. This makes it especially useful for fostering creative thinking, self-efficacy, and adaptable learning skills in adolescents and young students.

Amabile's Componential Model of Creativity (1996)

Amabile's Componential Model of Creativity (1996) views creativity as the result of the interaction between personal abilities and the social environment. Instead of a single trait, creative output occurs when external conditions support internal components (Conti et al., 1996). This model has influenced education and organizations by demonstrating how context can enhance or restrict creativity (Amabile, 2011). Amabile identifies three main personal elements: skills related to the domain, processes that encourage creativity, and intrinsic motivation. Skills include knowledge and expertise; processes involve divergent thinking and perseverance; motivation pertains to interest and enjoyment rather than external rewards. She later emphasized social and environmental factors, noting that supportive settings fostering autonomy, feedback, and safety boost creativity (Conti et al., 1996). Excessive evaluation or strict controls can suppress it. Her model underscores the importance of learner-centered teaching, autonomy, and engaging tasks in education to foster creative problem-solving (Amabile, 2011).

Sternberg's Triarchic Theory of Intelligence (1985)

Sternberg's Triarchic Theory (1985) suggests that intelligence consists of three components: analytical, creative, and practical. Unlike a focus on academics alone, it stresses a balanced mix for adaptation and influence (Sternberg, 1985). It highlights creative problem-solving as key. Analytical skills evaluate information; creative skills generate new ideas; practical skills apply knowledge in daily life. Creative and analytical

work together to solve problems, with practical skills supporting real-world use. In education, nurturing all three promotes the development of adaptable, resilient learners (Sternberg, 1985). This approach encourages teaching that fosters innovation and meaningful learning.

These models collectively underline that CPSA is not a random act of genius but a skill that can be nurtured through structured practice, reflection, and supportive learning environments.

1.6.2. Theoretical Perspectives of Educational Wellbeing

Several theoretical models inform the understanding of educational wellbeing, drawing from developmental psychology, positive education, and humanistic theory.

Ryff's Model of Psychological Wellbeing (Ryff, 1989)

Ryff's Model of Psychological Wellbeing (1989) presents a eudaimonic view of wellbeing, emphasising psychological functioning and personal growth over fleeting happiness. It suggests actual wellbeing comes from realising one's potential and leading a meaningful life. Ryff, widely referenced in education, outlined six essential aspects of well-being: self-acceptance, positive relationships, autonomy, environmental mastery, purpose in life, and personal growth. Self-acceptance refers to having a positive view of oneself, while positive relationships involve trusting connections (Ryff, 1995). Autonomy signifies independence, and environmental mastery is about effectively managing one's surroundings. The aspects of purpose and personal growth emphasise future objectives and continual self-improvement. In education, these dimensions relate to engagement, resilience, and wellbeing, offering a foundation for understanding how psychological resources support learning and development.

Seligman's PERMA Model of Wellbeing (2011)

Seligman's PERMA Model (2011) is a fundamental idea in positive psychology, defining wellbeing through five components: Positive Emotion, Engagement, Relationships, Meaning, and Accomplishment (Seligman, 2018). True flourishing occurs when these are experienced in balance. The model is widely used in education to support student growth and wellbeing. Positive Emotion, including happiness and hope, boosts resilience. Engagement means deep involvement in activities, often in a flow state. Relationships involve supportive social bonds. Meaning is a sense of purpose and connection to something larger, nurtured through values, service, and spirituality. Accomplishment

involves goal pursuit, confidence, and motivation (Seligman, 2018). In education, PERMA offers a framework for enhancing wellbeing by fostering positive emotions, engagement, relationships, meaning, and achievement, promoting resilience, creativity, and lifelong learning, aligning with goals to improve mental health and educational success.

Self-Determination Theory (Ryan & Deci, 2000)

Self-Determination Theory (SDT), developed by Ryan and Deci (2000), describes motivation through the fulfilment of three psychological needs: autonomy, competence, and relatedness. Meeting these promotes optimal functioning, motivation, and wellbeing (Ryan & Deci, 2024). Widely used in education, SDT emphasises autonomy-supportive teaching, helpful feedback, and social connections. Fostering these needs enhances engagement, persistence, motivation, problem-solving, and resilience, supporting effective learning and student wellbeing (Ryan & Deci, 2024).

Konu and Rimpelä's School Wellbeing Model (2002)

Konu and Rimpelä's School Wellbeing Model (2002) provides a comprehensive framework for understanding students' wellbeing, combining individual experiences and institutional factors. It views school wellbeing as a multidimensional concept shaped by the interplay among the learning environment, social relationships, and personal experiences. The model highlights four key dimensions: Having, Loving, Being, and Health. 'Having' refers to material and structural aspects such as facilities, resources, safety, and organisation. 'Loving' emphasises positive social relationships with teachers, peers, and the community (Konu et al., 2002). 'Being' involves opportunities for personal growth, autonomy, and participation. 'Health' covers physical and mental wellbeing, including stress, emotional stability, and vitality. The model links environmental factors to students' psychological and social wellbeing, showing how supportive environments promote engagement, self-efficacy, and positive experiences (Konu et al., 2002). Considering all four dimensions helps schools foster conditions that enhance students' educational wellbeing, resilience, and ability to manage academic and social challenges.

1.6.3. Theoretical Perspectives of Self-Efficacy

Bandura's Social Cognitive Theory of Self-Efficacy (1986)

Bandura's Social Cognitive Theory (1986) highlights self-efficacy as fundamental to human behaviour, defining it as the confidence in one's ability to plan and execute actions

for upcoming situations. Instead of focusing solely on skills, Bandura noted that beliefs about capabilities strongly influence thoughts, emotions, motivation, and actions (Bandura, 1996). Learning and growth result from interactions among personal factors, behaviour, and the environment, a theory called reciprocal determinism. Self-efficacy influences activity choice, effort, persistence, and emotional responses to challenges. High self-efficacy correlates with seeing tasks as opportunities, persisting despite obstacles, and bouncing back from setbacks. Low self-efficacy often leads to avoiding challenges, increased stress, and giving up. Bandura outlined four sources: mastery experiences, vicarious learning, verbal encouragement, and emotional states (Bandura, 1996). In education, social cognitive theory stresses the role of self-efficacy in motivation, problem-solving, and wellbeing. Confident students explore ideas, use innovative strategies, and persist through difficulties. Self-efficacy also supports emotional regulation and resilience, helping learners manage stress and stay engaged (Bandura, 1996). Overall, the theory explains how self-efficacy influences creative problem-solving and educational wellbeing in school adolescents.

Zimmerman's Model of Self-Regulated Learning (2000)

Zimmerman's Model of Self-Regulated Learning (2000) conceptualises learning as an active, ongoing cycle in which learners continuously plan, observe, and evaluate their progress. Based on social cognitive theory, it emphasises metacognition, motivation, and behavioural regulation. Zimmerman argued that successful learners are proactive, setting goals, choosing strategies, and adjusting efforts based on feedback (Zimmerman, 2002). The model consists of three stages: forethought, performance, and self-reflection. During forethought, learners establish goals and build motivation. In the performance phase, they implement strategies and self-monitor their progress. Self-reflection involves evaluating their performance and emotional responses, which then influence subsequent cycles (Zimmerman, 2002). The model highlights self-efficacy's role in motivation and strategic engagement, with self-regulation skills promoting persistence, problem-solving, and adapting approaches. By encouraging goal-setting, reflection, and self-monitoring, educators can enhance students' self-regulation and success, making it a valuable framework for fostering creativity and positive outcomes.

Carver and Scheier's Control Theory (1982) and Self-Efficacy

Carver and Scheier's Control Theory (1982) depict human behaviour as a self-regulating feedback system, in which individuals compare their current state with goals and use

feedback to guide their actions. The theory highlights that belief in one's ability to bridge gaps between goals and performance, akin to self-efficacy, is vital for effective self-regulation (Jacobs et al., 1984). People act when they notice a gap, evaluate their progress through self-monitoring, and adjust their strategies based on feedback. Feeling capable encourages persistence and adaptation, whereas low control can lead to withdrawal or negative emotions (Jacobs et al., 1984). In education, the theory builds on Bandura's self-efficacy theory, showing how beliefs in personal influence support ongoing self-regulation. Students with confidence in their abilities tend to manage their learning better, accept feedback more openly, and persist through challenges. Overall, this provides a framework for understanding how self-efficacy influences motivation and success in education.

Lent, Brown, & Hackett's Social Cognitive Career Theory (1994)

The Social Cognitive Career Theory (SCCT) builds on Bandura's concept of self-efficacy to explain how career interests, choices, and successes develop. It emphasises three main factors: self-efficacy, outcome expectations, and personal goals. The theory proposes that individuals are more likely to engage in activities and persevere when they believe they can succeed, anticipate favourable outcomes, and set clear goals (Lent et al., 2002). Environmental influences also affect motivation, learning, and career growth. In education, SCCT shows how adolescents' confidence and perceived support impact their engagement, problem-solving, and future objectives.

1.6.4. Theoretical Perspectives of Spiritual Practices

Several developmental and psychological theories provide a conceptual framework for understanding spiritual development in adolescents:

Fowler's Faith Development Theory (1981) of Spiritual Practices

Fowler's theory outlines how individuals develop faith and spiritual understanding throughout their lives. He sees faith as more than religious belief; it is about finding meaning, purpose, and moral direction. The theory ranges from early childhood's intuitive-projective faith to adulthood's universalising faith, with adolescence as a key phase of synthetic-conventional faith (Parker, 2009). In this stage, teens critically examine their values as they blend personal and cultural beliefs. Applying Fowler's framework in education can foster spiritual practices that improve ethical choices, resilience, and wellbeing, guiding adolescents toward purpose and growth.

King and Benson's Developmental Framework (2006)

King and Benson's framework highlights spirituality's role in adolescent development, affecting identity, morality, and wellbeing. It states adolescents gain spiritual understanding through experiences, reflection, and social interactions, aiding ethical navigation, purpose, and resilience (Benson et al., 2012). Spiritual growth is linked to emotional regulation, coping, and prosocial behaviours, making it vital in education. Schools can improve adolescent wellbeing by promoting activities that foster purpose, motivation, adaptive coping, and social skills.

The Search Institute's 40 Developmental Assets Model

The 40 Developmental Assets Model by the Search Institute details external supports such as family, peers, and safe schools, and internal supports such as commitment, values, social skills, and purpose (Blocher, 2009). These assets foster resilience, responsible choices, and emotional health in youth. Schools should build supportive relationships, foster moral values, and provide opportunities for skills development to enhance wellbeing. Using these assets helps educators improve problem-solving, self-efficacy, and growth.

Roeser's Neurocognitive Model of Spiritual Practice (2012)

Roeser's model indicates that spiritual activities affect adolescent growth via neurocognitive, emotional, and reflective functions. Practices such as meditation, prayer, or mindful reflection activate brain regions associated with attention, self-regulation, and moral judgment, thereby enhancing self-awareness, perspective-taking, and decision-making (Roeser, 2016). In education, such practices can improve problem-solving, resilience, and wellbeing by strengthening cognitive and emotional skills. The model connects biological, psychological, and spiritual development, showing how reflection fosters holistic growth.

Transactional Model of Stress and Coping (Lazarus & Folkman, 1984)

Lazarus and Folkman's model views stress as a dynamic process arising from the interaction between an individual and their environment, emphasising cognitive appraisal of threats and coping resources (Biggs et al., 2017). Coping methods include problem-focused (addressing stressors) and emotion-focused (managing feelings). For

adolescents, effective coping links to self-efficacy, emotional regulation, and resilience, influencing educational wellbeing and creative problem-solving. Supportive school environments and skill development can boost confidence in coping, reduce stress, and promote cognitive, emotional, social, and spiritual growth (Biggs et al., 2017).

Spiritual practices are key developmental resources during adolescence and, when integrated into education, can boost resilience and creativity, offering valuable insights into adolescent wellbeing in diverse contexts, such as India.

CHAPTER-II
REVIEW OF RELATED LITERATURE

CHAPTER-II
REVIEW OF RELATED LITERATURE

2.0. Introduction

This chapter provides a critical overview of both theoretical and empirical research related to the variables examined in this study. It involves analysing book chapters, research articles, theses, reports, and policy documents to understand what has already been examined, how it has been approached, and what gaps remain. This review aims to examine current knowledge, recognise research trends, and point out gaps that support the necessity of this study. Relevant literature is sourced from peer-reviewed journals, books, doctoral theses, and reports from national and international agencies. The review emphasises key concepts, theoretical frameworks, and methodological approaches used by previous researchers. Instead of simply summarising past studies, this chapter critically evaluates their findings, limitations, and contextual relevance. The insights gained help refine the conceptual framework and guide the selection of suitable research methods.

2.1. Objectives of the Literature Review

The objective is to identify existing knowledge gaps and provide an adequate background for the current study.

1. To establish research questions, objectives, hypotheses, and the problem statement to guide the research methodology.
2. To help the researcher identify and analyse key variables and factors in the study.
3. To enhance the researcher’s understanding of the findings' significance, relevance, their relationships with prior studies, and their theoretical and practical implications.
4. To provide a critical synthesis of current theories and concepts that underpin the study.

2.2. Methodology of the Literature Review

The researcher adopted a semi-systematic literature review approach. Relevant studies were obtained from reputable databases, including Google Scholar, ProQuest, ScienceDirect, Scopus, and Shodhganga, using keywords such as creative problem-

solving ability, creative problem-solving, students' wellbeing, educational wellbeing, self-efficacy, spiritual practices, the mediating role of SE and SP, and how CPSA relates to EW. From these searches, the researchers initially collected 4202 research articles and theses. Two hundred sixty-four duplicate articles were identified and removed. After applying the inclusion criteria and screening titles and abstracts for relevance, the researcher shortlisted 516 studies. Then, 405 studies that did not align with the study's purpose were excluded. Therefore, the researcher included 111 studies in this chapter. For clarity, the researcher summarises the selection process and the reviewed studies in Table 2.1.

Table 2.1. The Procedure Followed for the Literature Review

Literature Review	Semi-Systematic and Integrative Literature Review
Searching Databases	Online- Google Scholar, ScienceDirect, Scopus, ProQuest, and Shodhganga
Keywords	"Creative Problem-Solving", "Creative Problem-Solving Ability", "Educational Wellbeing", "Students Wellbeing", "Self-efficacy", "Spiritual Practices", and "spirituality"
Inclusion Criteria	• English language • Title and Abstract • Publication year between 2011 and 2024 • Relevant to the research topic • Studies with sufficient information regarding the location of the study, participants, purpose, methodology, and findings.
Exclusion Criteria	• Not available in the English Language • Unavailability of full text • Paid version text • Insufficient information
Literature Selection	The details selection process is presented in Fig. 2.1.

Table 2.2. Area- wise List of the Literatures

Areas	Pages Searched	Literatures Downloaded	Final Included
Creative Problem-Solving Ability (CPSA)	20	75	18
Educational Wellbeing (EW)	20	123	25
Self-Efficacy (SE)	20	82	20
Spiritual Practices (SP)	20	115	13
EW and SE	10	43	35
EW and SP	10	31	
CPSA and SE	10	27	
SE and SP	10	20	
Total	110	516	
Finally Selected			111

2.2.1. Literature Selection Process

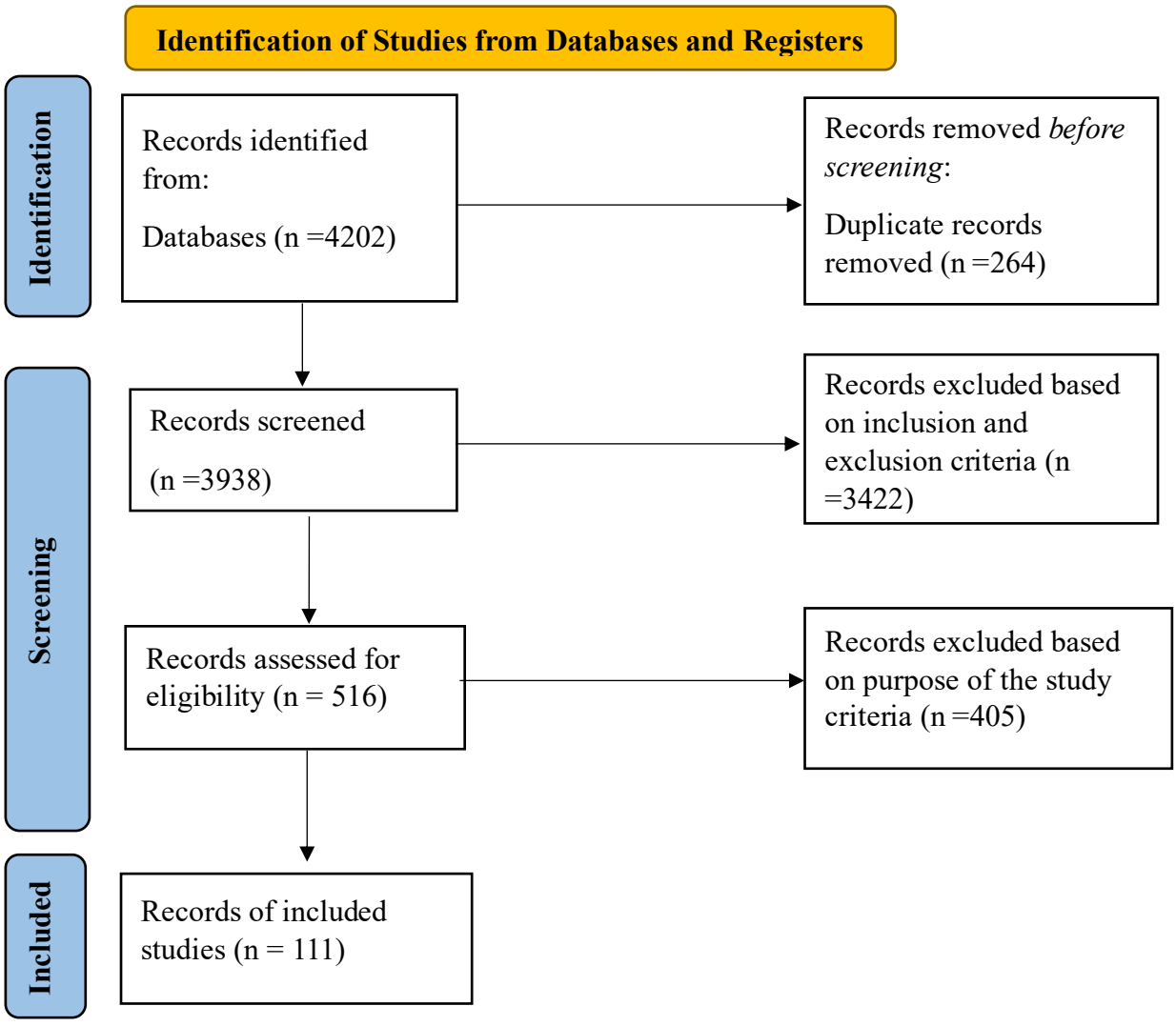


Fig. 2.1. Literature Selection Process

2.2.2. Preparation of the Review Matrix

After thoroughly reviewing the full texts included in the study, the researcher created review matrices with the basic structure shown in Table 2.3. The following paragraphs provide a concise summary of the studies reviewed (see Section 2.3). Finally, based on the review matrices (see Appendix J), the researcher analysed the trends identified, which are discussed at the end of the chapter.

Table 2.3. Structure of the Review Matrix

Author (s)	Year of the study	Location of the study	Objectives of the study	Methodology of the study	Findings of the study
Akdeniz and Alpan	2020	Ankara, Turkey	Examine creative problem-solving styles among gifted students	Survey of 151 talented students	Gifted students preferred the conceptualizer style, with no gender differences. CPS styles differed by talent area (academic, music, arts).

2.3. Review of Related Literature

2.3.1. Studies on Creative Problem-solving Ability

Akdeniz and Alpan (2020) examined creative problem-solving styles among 151 gifted students from the Ankara Science and Arts Centres. Students most preferred the conceptualizer style, followed by the generator, optimiser, and implementer. Creative Problem-Solving styles differed by talent area (academic, music, arts), but no gender differences were found.

Amran (2019) reviewed Malaysia's Education Blueprint (2015-2025), emphasising CPS as a priority for future skills. It discussed creative problem-solving concepts, implementation challenges, and influencing factors on student creativity. Various creative problem-solving theories and approaches were analysed for educational application. The study highlights how the development of creative problem-solving strengthens innovation in higher education.

Barman and Dasgupta (2024) investigated mindfulness, cognitive flexibility, and CPS among 350 secondary school students in Assam. Utilising a cross-sectional design, they found that mindfulness enhances cognitive flexibility, which in turn predicts higher CPS performance. This study validates a sequential pathway from mindfulness to CPS via cognitive flexibility in Indian adolescents.

Diani (2019) investigated how the Search, Solve, Create, and Share (SSCS) learning model affects creative problem-solving in 8th graders. Results showed that the experimental group outperformed the control group in this area, with a notably strong effect size. The findings suggest that SSCS effectively enhances creativity in solving problems.

Fatmawati (2020) assessed creative problem-solving among biology students as they solved pollution-related problems. Most students struggled with the creative problem-solving stages, especially the development stage, compared to the ideation stage. Findings indicate that students lacked a strong application of Creative Problem-Solving despite moderate strengths. More interventions were recommended to improve creative problem-solving in environmental education.

Fiteriani et al. (2021) tested the PjBL-STEM model on physics students' CPS and metacognition. Experimental students showed higher problem-solving and metacognition scores than the control group. Effect sizes were medium, confirmed by MANOVA significance. The study supports STEM-based PjBL as beneficial.

Hooijdonk et al. (2023) examined Creative Problem-Solving (CPS) indicators, divergent thinking, and achievement among 5th–6th graders. Results aligned with CPS theory, confirming the reliability of relationships among creativity indicators. CPS was evident even at primary levels. The researchers recommend applying CPS early in the educational process.

Keles (2022) compared 73 gifted and 302 non-gifted students using the Creative Problem-Solving (CPS) features inventory. Gifted students scored higher in divergent thinking and general knowledge. Girls among the gifted scored better in environmental dimensions. Grade level also influenced CPS differences.

Kumar (2020) found that higher secondary students in Nagapattinam demonstrated strong problem-solving skills but moderate creativity. No correlation was found between creativity and problem-solving. Gender differences were insignificant. The study suggests strengthening creativity programs.

Lin et al. (2011) assessed 409 Taiwanese students for Creative Problem-Solving (CPS) in math. Divergent thinking and domain knowledge were the strongest predictors. Convergent thinking and motivation indirectly influenced results. Schools should foster creativity alongside content knowledge.

Michele Gaglione (2021) linked CPS attributes to the classroom environment among middle school students. Participation in humanities-based courses increased CPS perception. The learning environment accounted for CPS variation. Study emphasises designing creativity-supportive classrooms.

Mishra and Pandey (2024) examined the role of mindfulness in enhancing creative cognition and mental health among 300 undergraduate students in central India. Using instruments such as the Mindfulness Attention Awareness Scale and the Mental Health Inventory, the study found that mindfulness significantly predicts CPS ability and reduces stress and emotional exhaustion. This integration of mindfulness as a psychological resource underscores its dual role in fostering creativity and mental health.

Muin et al. (2018) conducted a study on CPS in math that showed it improved students' adaptive reasoning more than traditional methods. Both inductive and deductive reasoning showed progress. Intuitive reasoning benefited most. CPS strengthens analytical mathematical thinking.

Padmavathy (2012) conducted a study on 317 IX-grade students who were evaluated using the Passi-Usha CPS test. Students showed weaknesses in the originality component. Researchers suggest targeted programs for creativity. Schools must boost students' originality skills.

Rakesh and Geetha (2016) assessed Creative Problem-Solving (CPS) among 200 secondary school students. Boys performed better than girls, and urban students outperformed rural students. No difference found between private and government schools. Location and gender influenced CPS outcomes.

Tripathi and Srivastava (2024) explored the relationship between CPS and psychological resilience in 400 secondary school students from urban and rural Uttar Pradesh. Using the Creative Problem-Solving Scale and the Connor Davidson Resilience Scale, they found that higher CPS scores correlate with greater resilience, adaptability, and stress tolerance. This study advances the conceptualisation of CPS as a resilience-building cognitive skill within positive psychology frameworks in Indian adolescents.

Willemsen et al. (2024) studied the impact of instructional support based on random associations and constraint identification on upper-elementary students' creative

problem-solving in science. The results indicated an improvement in convergent thinking, particularly among students with stronger mathematical abilities, but no significant effects on divergent thinking or from the instructional support itself. Regular practice in both divergent and convergent thinking could effectively enhance convergent thinking abilities.

Zulyadaini (2017) evaluated the Creative Problem-Solving (CPS) model in high-school mathematics classes. Students taught through CPS performed better than those using traditional methods. The t-test showed significant improvement in mathematical problem-solving. CPS supports active problem-based learning.

2.3.2. Studies on Educational Wellbeing

Bogerd et al. (2020) conducted a systematic review of 3,410 studies, identifying 37 related to nature-based educational environments. Green spaces were linked to student well-being, comfort, and cognitive restoration. However, results were inconsistent due to methodological variation and bias. Further research is required to better understand how nature influences learning outcomes.

Bortes et al. (2021) conducted a longitudinal study following 723 Swedish adolescents to explore links between subjective wellbeing and academic performance. No significant patterns were found in boys, but girls with higher wellbeing performed better academically. Surprisingly, high early achievement predicted lower later wellbeing in girls. The study highlights gender-specific dynamics in the relationship between success and wellbeing.

Bottomley et al. (2023) surveyed 310 physics students; this research applied the "social cure" perspective to gender differences in wellbeing. Women reported lower physics identity and self-efficacy, though their wellbeing levels matched men’s overall. Belonging influenced men's well-being more, while self-efficacy was key for both genders. The study suggests improving belonging support for women in STEM.

Chen and Lu (2014) examined Taiwanese adolescents and how after-school activities influence well-being and achievement. Academic programs and homework improved grades, while cram schools harmed psychological wellbeing. School extracurriculars showed no benefit, unlike findings from Western studies. Some leisure activities, like gaming, reduced depression, suggesting balanced scheduling is essential.

Dobosz and Hetmanczyk (2023) reviewed 18 studies on Chinese students’ mental health in educational contexts. Wellbeing varied with academic demands, medical school

pressures, and study-abroad conditions. The authors found limited mental-health research specific to Chinese education systems. They recommend more targeted interventions and culturally relevant research.

Donoso (2021) used national data from Chilean secondary schools. The study examined ICT access and adolescent well-being. Results showed that higher digital development in schools correlated with greater subjective well-being. ICT improved learning experiences and engagement. The study supports integrating technology into schools to enhance well-being.

Elovainio et al. (2011) found that, across 136 Finnish secondary schools, organisational justice among staff was linked to student well-being and achievement. Low procedural justice was associated with dissatisfaction, while relational injustice was associated with poorer grades and psychosomatic complaints. A fair school climate improved academic and emotional outcomes. The study recommends strengthening fairness in school management.

Erdem and Kaya (2021) used PISA 2018 data from Turkey to examine socioeconomic status, well-being, and academic success. SES emerged as the strongest predictor of performance in reading, math, and science. Well-being contributed modestly, not substantially, compared to SES. The study calls for policies reducing educational inequality.

Gill et al. (2021) conducted a review of 17 studies that analysed how students define success and its relationship with well-being. Adolescents valued intrinsic goals, growth, satisfaction, and achievement of personal goals over external rewards. These values were positively tied to well-being and motivation. The study suggests integrating character- and value-based learning.

Green et al. (2014) compared student well-being in private and public schools across three regions of Spain. Private schooling initially appeared to improve satisfaction, but after adjusting for quality factors, the effect disappeared or reversed. Academic performance was higher in private schools, yet not in well-being. The findings emphasise that academic success does not guarantee emotional well-being.

Grosa and King (2023) studied Latvian return-migrant children who reported challenges in adapting to new school systems and languages. Interviews with 40 participants highlighted communication gaps between parents, teachers, and support staff. Secondary students struggled most with expectations and reintegration. The study calls for better language support and teacher training in diversity.

Hossain et al. (2023) revealed a review of 33 studies that identified varied definitions and approaches to student wellbeing. Four main well-being models emerged: hedonic, eudaimonic, integrative, and combined. Eight domains, such as emotion, engagement, and relationships, were common across research. The study recommends more qualitative work in non-Western contexts.

Hunner-Kreisel et al. (2022) examined the wellbeing of youth in Azerbaijan and Kyrgyzstan, emphasising structural and policy influences. Limited health, education, and leisure infrastructure restricted children's development. Family and state support were not sufficient for equitable well-being. The study advocates systemic reforms and increased youth-focused policies.

Karvonen (2018) conducted a longitudinal study of 100,413 students in Helsinki, linking low school achievement with low well-being. Socioeconomic disadvantage strongly shaped both outcomes. Schools showed distinct patterns of well-being and academic development over time. Policy efforts must target both performance and well-being together.

Kiuru et al. (2020) conducted a longitudinal study of 848 adolescents during the transition to secondary school. Strong relationships with teachers, peers, and parents improved well-being and academic performance. The relationship was reciprocal better well-being also enhanced school outcomes. The findings support relationship-building as a core intervention.

Leventhal et al. (2015) conducted a randomised controlled trial involving 3,560 adolescent girls in rural Bihar, India, comparing resilience and health curricula. The combined intervention group showed the most significant improvements across emotional, physical, social, and educational wellbeing. Separate programs were helpful but less effective than the integrated model. The study highlights the strength of merging resilience-building with health education.

Liu et al. (2021) conducted a study on live webcast classes among twelfth-graders in underprivileged regions of China. Academic well-being remained stable across different achievement levels, though improvement needs varied. Self-efficacy, empathy, and academic buoyancy were key factors in well-being. Collaboration between webcast teachers and local staff was recommended to enhance learning support.

Lu (2021) used data from the China Education Panel Survey; this study examined parental education expectations and adolescent well-being. Higher expectations improved well-being, but academic pressure weakened the positive effect. Girls and students from non-

poor or migrant families benefited most. The study stresses balanced expectations to avoid stress-related decline.

Miller (2013) studied 1,081 students in Northern Ireland and found a positive link between well-being and academic achievement. Gender and socioeconomic deprivation did not significantly change this relationship. The study suggests that well-being promotion should be universal rather than targeted by subgroup. Enhancing students' emotional health may support learning outcomes.

Norwich et al. (2022) conducted a paper discussing well-being and mental health among pupils in English schools during COVID-19. The authors argued for a dual-factor model distinguishing mental illness from positive well-being. They called for whole-school well-being approaches alongside mental health support services. The study emphasizes social and emotional learning (SEL) as a crucial part of school practice.

Pulimeno et al. (2020) reviewed 74 articles and 17 books; the study emphasised schools as ideal environments for promoting well-being. Health education programs in early schooling can prevent chronic diseases later in life. The authors stress the need to train educators in creative engagement strategies. Integrating health education into the curriculum could improve academic and health outcomes.

Rashmi and Paul (2022) used data from the India Human Development Survey. This study compared educational wellbeing between tribal (ST) and non-tribal children. Tribal children scored significantly lower on indicators of educational well-being. Household economic status and adult education partly explained the gap, but inequalities persisted. The study calls for targeted policies to support tribal children's education and reduce structural disadvantages.

Stasulane (2017) used Measuring Youth Well-Being data from 11 European countries to analyse children's self-reported school well-being. It highlighted how local and global social changes shape youth perceptions of well-being. The research argued that emotional and social dimensions must be considered alongside academic learning. Schools are encouraged to embed systematic well-being assessment into practice.

Stephenson (2023) studied through longitudinal action research. This study explored Drama Worldbuilding as a creative pedagogy to support children's well-being during global crises. The approach fostered collective imagination, critical reflection, and hope. Children developed competencies like collaboration, agency, and emotional expression. The study proposes reimagining curricula to integrate creative arts as a route to well-being.

Torrano (2021) focused on Kazakhstan; this study examined how school psychologists understand and promote student well-being. Although psychologists generally held positive views of child well-being, their practice focused more on addressing problems than on fostering positive states. Structural and professional barriers limited proactive well-being work. The study recommends clearer frameworks, training, and support for a more holistic well-being role in schools.

2.3.3. Studies on Self-Efficacy

Abusalehi et al. (2019) examined academic self-efficacy among 385 students at Tehran University of Medical Sciences using a cross-sectional design and stratified sampling. The study identified a significant relationship between age and academic self-efficacy, while students' location showed no significant association. A notable correlation was also observed between academic degree level and self-efficacy.

Adelodun and Asiru (2015) examined the roles of self-efficacy and gender in the performance of English discourse writing among 40 high-achieving students. The results indicated a positive correlation between academic self-efficacy and English writing performance. However, gender was not significantly related, and the independent variables showed no combined effect on performance.

Ahmad and Safaria (2013) studied 15 fifth-grade students in Pakistan to explore how self-efficacy affects academic performance and social interaction. Students with high self-efficacy performed better in mathematics. Interviews also showed that they were more willing to take on complex subjects in the future.

Ahmadi (2020) studied how academic self-esteem and self-efficacy relate in 365 high school students. Every aspect of academic self-esteem, except success/failure, was directly connected to academic self-efficacy. Additionally, most components influenced academic achievement indirectly via self-efficacy.

Ahuja (2016) assessed self-efficacy, educational aspirations, and academic achievement among 210 ninth-graders in Delhi. Girls scored significantly higher than boys in all three areas. A significant positive correlation was found between self-efficacy and academic achievement.

Andretta et al. (2020) analyzed data from 3,485 adolescents in Northern Ireland to examine academic, social, and emotional self-efficacy. Emotional self-efficacy strongly predicted well-being. Five self-efficacy profiles emerged, with the high-efficacy group exhibiting the most optimal well-being.

Anupam Lata (2019) surveyed 280 adolescents to examine self-efficacy and academic achievement across gender, grade, and residence. Students' self-efficacy varied based on their residential background. Dimensions of self-efficacy showed a positive correlation with academic achievement.

Atoum and Al-Momani (2018) studied perceived self-efficacy among 356 secondary students. Most students had moderate levels of self-efficacy. Academic achievement significantly affected self-efficacy, while gender did not.

Cheema and Kitsantas (2014) examined PISA data from 4,199 students to assess classroom climate and math self-efficacy. They found that a positive disciplinary climate helped decrease achievement gaps, whereas high self-efficacy tended to increase them. The impact varied across different races and genders.

Goulao (2014) examined 63 adult learners in online environments. The students exhibited high levels of academic self-efficacy, averaging a score of 45. A notable correlation ($r = 0.286$, $p < 0.05$) was identified between self-efficacy and academic performance.

Hasan and Parvez (2019) studied 400 secondary students to understand how self-efficacy, gender, and location affect achievement. A strong positive link was found between self-efficacy and academic performance. Gender also significantly influenced both factors.

Hwang et al. (2016) tracked 1,177 Korean students over five years to examine the interactions between performance self-efficacy and performance. Early academic success positively predicted later self-efficacy, which then predicted future achievement. The relationship was reciprocal across different grades.

Kanmani (2018) assessed 500 marginalised high school students for links between self-efficacy and academic success. The findings reported no significant correlation. This suggests that contextual factors might influence outcomes.

Kleppang et al. (2023) examined mastery experiences and self-efficacy among 9,221 adolescents. Mastery experiences explained the variance in self-efficacy, with peer and parental support reinforcing this effect. The study highlighted the importance of developing mastery experiences to boost self-beliefs.

Meera and Jumana (2015) examined the English performance and self-efficacy of 520 secondary students. Rural and urban students differed significantly in both academic performance and self-efficacy. No significant differences were found based on gender or management type.

Motlagh et al. (2011) assessed 250 high school students and found that self-evaluation and self-regulation predicted academic achievement. These factors explained the variance in achievement. Self-direction also correlated with achievement.

Njega et al. (2019) surveyed 412 Kenyan secondary students. A strong positive correlation was found between self-efficacy and academic performance. Male students scored slightly higher in self-efficacy than females.

Oyuga et al. (2019) studied 300 orphaned secondary students and found that academic self-efficacy was crucial for performance. A mixed-method approach supported Social Cognitive Theory. Principals' responses reinforced the importance of self-belief in achievement.

Sucuog (2018) examined 298 psychology students and found that higher socioeconomic status (SES) is positively associated with greater self-efficacy and improved academic achievement. The study highlights that increased self-efficacy correlates with better performance and underscores the impact of SES.

Villafana et al. (2016) analyzed self-efficacy and performance in organic chemistry using SEM. The snowball effect model best explains the reciprocal growth between self-efficacy and course performance. Higher self-efficacy consistently enhanced exam outcomes.

2.3.4. Studies on Spiritual Practices

Akbayram and Keten (2024) examined the relationships between religion/spirituality and psychological health among 399 medical students. Muslims demonstrated significantly better psychological health than non-Muslims. Higher religious engagement was associated with greater resilience, life satisfaction, and overall well-being.

Berghuijs et al. (2013) examined new spirituality and social engagement using a Dutch population sample. Findings showed lower social engagement than among traditional religious individuals, but higher than among secular individuals. Spiritual individuals were more involved in environmental and peace-related causes.

Bussing et al. (2018) validated the Gratitude/Awe scale (GrAw-7) with 183 participants. The scale showed strong reliability and measured experiences of spiritual gratitude. Meditation was linked to awe, while prayer was more related to a daily tendency toward gratitude.

Dumulescu (2022) discussed integrating spirituality into psychotherapy. Spiritual practices assist in addressing existential crises and trauma recovery. The study offers guidelines for therapists using spiritual approaches.

Hardy et al. (2019) reviewed 30 years of research (1988–2017) on how religiosity and spirituality impact adolescents, analyzing 241 studies. Findings show spirituality generally supports well-being, reduces risks, and fosters positive development, but can be harmful in some contexts. Evidence suggests causal links influenced by values, peers, and norms. The review urges more diverse, culturally informed, and rigorous research.

Kim and Esquivel (2011) examined the role of spirituality in adolescent development. The study found that spirituality positively influences adolescents' resilience and overall healthy growth. It also supports effective coping strategies, boosts well-being and mental health, and correlates with improved academic performance.

McCann et al. (2020) reviewed the literature on spirituality and mental health among LGBT youth. Religion often caused conflict and shame, but spirituality also provided support. The intersection significantly influenced psychological outcomes.

Papathanasiou et al. (2020) found that spirituality is negatively correlated with anxiety, depression, and social dysfunction in hypertensive elderly individuals. Higher levels of spirituality were linked to better mental health and greater resilience. Urban, younger seniors exhibited higher levels of spirituality.

Strawn and Gioielli (2020) examined boredom in prayer through theology and psychoanalysis. They argued boredom can reflect stages of spiritual growth or personal obstacles. Therapeutic strategies help deepen prayer engagement.

Winzer et al. (2018) found that Buddhist spiritual practices were associated with happiness in Thai surveys. Religious rituals, gratitude, and meditation boosted happiness levels. Spirituality remained a strong predictor even after accounting for other factors.

2.3.5. Studies on the Relationship among Creative Problem-solving Ability, Educational Wellbeing, Self-Efficacy and Spiritual Practices

Aggarwal et al. (2023) studied 45 longitudinal and 29 intervention studies on youth aged 10–24 regarding spirituality, depression, and anxiety. Results show spiritual well-being can protect against depression; negative religious coping may increase symptoms; personal religious importance has inconsistent effects. Spiritual interventions were mostly helpful, despite low study quality.

Amiri et al. (2019) studied 500 Iranian university students, finding moderate health lifestyles, poor physical activity, and abnormal well-being in 34% of participants, with 68% showing high self-efficacy. Positive links existed among self-efficacy, well-being, and healthy behaviors, leading to suggestions for curriculum improvements.

Andretta and McKay (2020) studied how academic, social, and emotional self-efficacy relate to well-being among 3,485 adolescents in Northern Ireland. Analyses showed emotional self-efficacy as vital for well-being; five self-efficacy profiles were identified. Adolescents with high self-efficacy had the best outcomes.

Baity et al. (2021) studied 70 students to examine how creative problem-solving models, motivation, and self-efficacy affect mathematical problem-solving. Results showed the creative model improved performance more than traditional methods. No interaction between variables was found, but students with high motivation and moderate self-efficacy who used creative methods achieved the best outcomes.

Bottomley et al. (2023) examined how belonging affects wellbeing among physics students using the social cure framework. Surveying 310 students, they found similar levels of wellbeing across genders, but women reported lower physics identity and self-efficacy. For men, belonging predicted wellbeing beyond self-efficacy, unlike women. The study highlights gender differences in the impact of STEM belonging on wellbeing.

Carter (2022) similarly examined how spiritual models influence spirituality, mindfulness, forgiveness, and hope, and how these traits affect self-efficacy among 384 students from Christian and public universities. Results showed that these traits mediated the relationship between spiritual support and self-efficacy. Perspective-taking did not moderate this relationship. The study supports Lent's model and emphasizes the importance of spiritual environmental support in enhancing self-efficacy.

Gupta and Sharma (2024) investigated CPS, emotional resilience, and subjective well-being among 420 secondary school students from Rajasthan. Their survey revealed that CPS significantly predicts emotional resilience, which mediates positive affect and life satisfaction, thereby establishing emotional resilience as a vital psychological link between CPS and well-being.

Heiman and Olenik-Shemesh (2020) studied 834 students to analyze how social support links loneliness, self-efficacy, and wellbeing. Support mediated relationships among emotional factors to enhance wellbeing across groups. Girls without learning disabilities reported higher self-efficacy and wellbeing. Programs that promote support and reduce loneliness are recommended.

Jain and Desai (2020) studied how self-efficacy affects well-being among 100 adolescents in Ahmedabad (50 boys, 50 girls) using purposive sampling. They used the Self-Efficacy Scale (Singh & Narain) and the General Well-Being Scale (Kalia & Deswal). Results showed no gender differences, but self-efficacy positively influenced well-being.

Jiang (2024) studied how music education affects students' academic performance and mental health, with self-efficacy and self-esteem as mediators. Analyzing data from 326 Chinese university students using structural equation modelling, results show music learning improves well-being, which boosts academic performance, with self-efficacy and self-esteem mediating.

Kamil and AL-Hadrawi (2022) studied self-efficacy and psychological well-being among 320 adolescents aged 12–19 using a correlational design. Participants completed the General Self-Efficacy Scale and the well-being scale. Findings showed most adolescents reported fair self-efficacy and well-being, with a positive correlation between the two.

Khodapanah and Tamannaeifar (2023) studied 375 female students and found that academic self-efficacy and happiness are positively related to academic well-being. Regression showed both predict well-being, with self-efficacy as the stronger predictor.

Kulshreshtha and Jain (2024) conducted a survey of 360 Rajasthan students. They found that CPS ability predicted self-efficacy, which reduced academic stress. Mediation analysis confirmed self-efficacy as a key mediator. The study uniquely supports self-efficacy as a stress buffer linking CPS and educational well-being.

Kumari and Prasad (2024) studied CPS's role in academic engagement among 400 students in Jharkhand. They found CPS predicts behavioral, emotional, and cognitive engagement, boosting educational well-being. The research uniquely frames CPS as a driver of sustained engagement rather than isolated acts.

Kurtulus et al. (2022) found that spirituality, compassion, and life satisfaction strongly predict well-being. Compassion and life satisfaction mediate the effect of spirituality. Spirituality indirectly enhances mental health through emotional pathways.

Min et al. (2022) studied 308 students in Chinese universities, finding that self-efficacy didn't significantly affect performance. However, affective commitment and psychological well-being had strong positive effects. Psychological well-being also mediated the relationships between self-efficacy, affective commitment, and performance.

Mishra and Kulshrestha (2024) studied 390 Uttar Pradesh adolescents and found that CPS predicts intrinsic motivation, curiosity, and mastery orientation, connecting CPS with motivation traits that support long-term educational well-being.

Mukherjee and Banerjee (2024) studied 310 Kolkata urban college students using a survey on cognitive flexibility, creativity, and well-being. They found that cognitive flexibility predicts creative idea generation and emotional health, with lower flexibility linked to more distress. The study highlights cognitive flexibility as key to creative problem-solving and mental health in Indian urban youth.

Nair, Thomas, and Menon (2024) examined how CPS, emotional regulation, and academic well-being relate among 360 adolescents in Kerala. Using various scales, they found positive links between CPS, cognitive reappraisal, and motivation, and a negative link with academic stress. Emotional regulation partially mediated the CPS-well-being relationship, emphasizing its role as a key mechanism in improving educational outcomes.

Pandit and Kulkarni (2024) studied CPS, metacognition, and educational well-being in 390 Maharashtra students. They found strong links between CPS and metacognitive awareness, which boosts academic confidence and well-being, integrating metacognitive processes into CPS research in India.

Prasetyo et al. (2023) reported that religious well-being predicts family resilience during COVID-19. Families with strong spirituality are four times more resilient. Enhancing religious well-being improves coping capacity.

Rathore and Mehta (2024) studied creative problem solving and academic emotions in 400 secondary students from Gujarat. Their correlational findings showed positive links between CPS and academic enjoyment, and negative links with boredom and anxiety, connecting academic emotions to CPS research and relating creative thinking to students' daily educational well-being.

Sharma and Singh (2024) surveyed 420 Indian secondary students to explore the link between CPS ability and psychological well-being. Using the Creative Problem-Solving Inventory and Ryff's Well-Being Scale, they found positive associations between CPS and factors such as autonomy, environmental mastery, and purpose. The study suggests that adolescents with higher CPS have better emotional balance and coping skills, integrating CPS into Ryff's well-being framework for Indian adolescents.

Singh et al. (2020) found that religious and spiritual practice groups had better well-being than non-practitioners among elderly women. Clinical interventions improved physical outcomes. Relationships and spirituality enhanced life satisfaction.

Song (2024) studied how teacher and peer support influence student engagement and well-being, with self-efficacy as a mediator, using data from 640 Chinese students. SEM results showed social support linked to higher engagement, well-being, and self-efficacy. Self-efficacy also predicted both engagement and well-being.

Srivastava and Yadav (2024) analyzed the predictive role of CPS in psychological flourishing among 410 secondary school students in Uttar Pradesh. Their findings demonstrate that CPS significantly predicts positive emotions, engagement, and a sense of accomplishment, thereby expanding CPS research to include flourishing frameworks and positive psychological growth.

Supandi et al. (2021) studied 154 mathematics students using SEM to examine self-efficacy, learning barriers, and performance. Results showed that learning barriers negatively affected self-efficacy, which positively influenced achievement. Students with fewer barriers had stronger creative problem-solving skills. The findings highlight reducing barriers to improve achievement and creativity.

Supriatna and Septian (2021) reported that both religiosity and spirituality are positively linked to student well-being, with religiosity exerting a relatively stronger influence. They concluded that strengthening spiritual and religious values can help protect and support students' mental health.

Thakur and Chauhan (2024) studied CPS, goal orientation, and academic well-being among 400 students in Himachal Pradesh. Their correlational study found positive links between CPS, mastery goal orientation, and persistence, with higher CPS associated with greater satisfaction and less fear of failure, highlighting motivational goal structures in educational well-being.

Upadhyay and Mishra (2024) examined the influence of CPS on psychological resilience and educational well-being among 430 secondary school students from Bihar. Their correlational survey showed that CPS significantly predicts resilience and academic confidence, which together improve overall educational well-being. The study uniquely conceptualises CPS as a resilience-building competency within resource-limited educational settings.

Valentina et al. (2022) studied the link between self-efficacy and well-being among Indonesian youth during COVID-19. They discovered that higher self-efficacy correlates

with better well-being. Education positively affected well-being, whereas gender did not have an impact. Additionally, self-efficacy accounted for 33.5% of the variance in well-being.

Verma and Tiwari (2024) studied 450 secondary students in Uttar Pradesh, linking CPS to academic and emotional well-being. Using a Creative Problem-Solving Test and the Emotional Adjustment Inventory, they found that higher CPS scores were associated with greater emotional stability, less academic anxiety, and greater classroom engagement. The study emphasises emotional adjustment, extending beyond traditional academic metrics in the Indian educational context.

Village and Francis (2023) found that spiritual well-being enhanced mental and physical health in Anglicans during lockdown. Positive affect mediated mental health benefits. Spirituality served as a buffer against pandemic stress.

Wulandari and Asikin (2019) evaluated the effect of the Creative Problem-Solving (CPS) model on problem-solving ability and its relationship with self-efficacy among eighth graders. CPS significantly enhanced students' problem-solving performance and overall learning quality. High-performing students exhibited strong indicators in both self-efficacy and problem-solving, while lower-performing groups faced difficulties. The study confirms CPS as an effective learning approach.

Wulantri (2020) assessed the effectiveness of creative-inquiry-based physics worksheets on students' self-efficacy and problem-solving. Using a quasi-experimental design with 12th graders, results showed significant improvements in self-efficacy and problem-solving for the experimental group. The worksheets outperformed commercial materials, reinforcing the link between high self-efficacy and better problem-solving.

Yousuf and Rahmani (2024) studied meaning-oriented spirituality and adaptability in 330 urban adolescents. Their survey showed that meaning in life predicts creative adaptability and problem-solving, emphasising existential meaning as a cognitive-emotional basis for CPS.

Yuliani et al. (2019) studied 25 eighth-graders, finding low creative problem-solving and moderate self-efficacy. Despite confidence, no significant link was observed, indicating that self-efficacy alone doesn't ensure strong creative problem-solving.

Kulshreshtha and Jain (2024) studied 360 Rajasthan students using standardised scales. They found that CPS predicts self-efficacy, which reduces academic stress. The study supports self-efficacy as a stress buffer linking CPS to educational well-being.

2.4. Literature Review Trends

As previously mentioned, while examining the included studies side by side, the researcher created a review matrix to facilitate the trend analysis.

2.4.1. Theme-wise Distribution of the Included Studies

The theme-wise analysis reveals that most studies (32%) focus on the interrelationships among CPSA, EW, SE, and SP, indicating a growing trend toward integrative research. Educational wellbeing (22%) and self-efficacy (18%) receive moderate attention, whereas creative problem-solving ability (16%) and spiritual practices (12%) are comparatively less studied, suggesting potential gaps for future research.

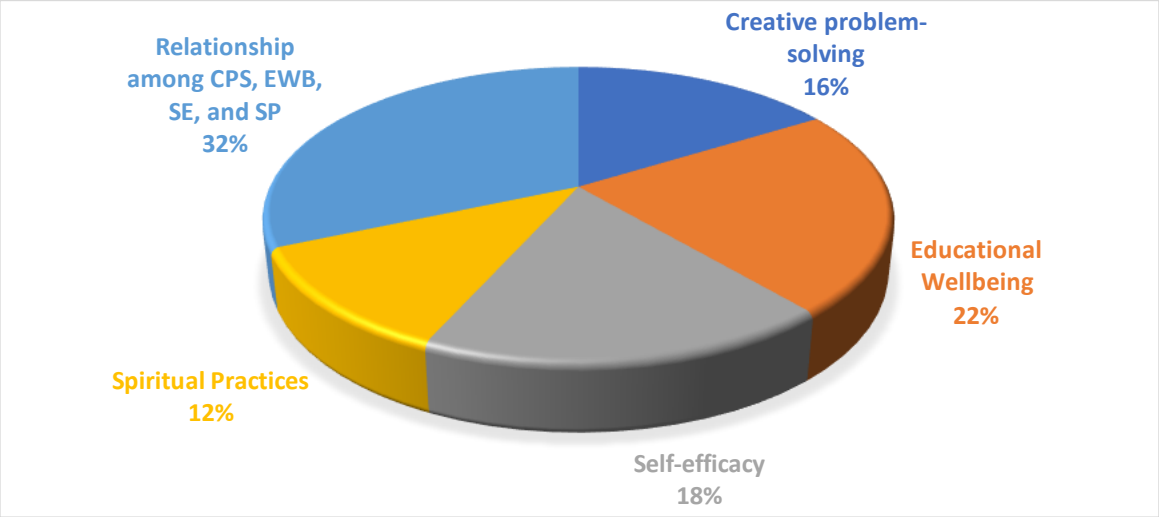


Fig. 2.2. Theme-wise Distribution of the Included Studies

2.4.2. Year-wise, Location-wise and Method-wise Distribution of the Studies on Creative Problem-Solving Ability

2.4.2.1. Year-wise Distribution

The distribution of research over the years shows sporadic output before 2018, with a steady increase starting in 2019 and a significant rise during 2020-2021. The peak in studies in 2024 indicates a recent boost in scholarly activity, suggesting that this research field has become more relevant and active in recent years.

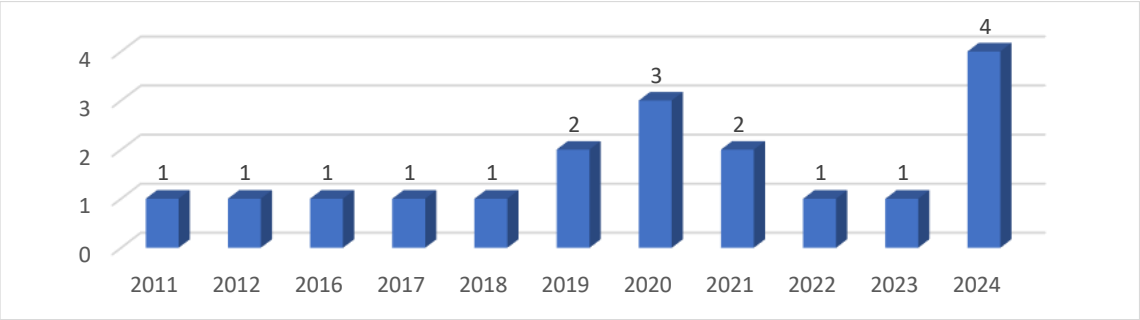


Fig. 2.3. Year-wise Distribution of the Studies on Creative Problem-solving Ability

2.4.2.2. Location-wise Distribution

The location-wise distribution shows that most studies were conducted abroad (12 studies), while studies in India (6 studies) are relatively few, highlighting the need for more indigenous research to better understand the findings within the Indian educational context.

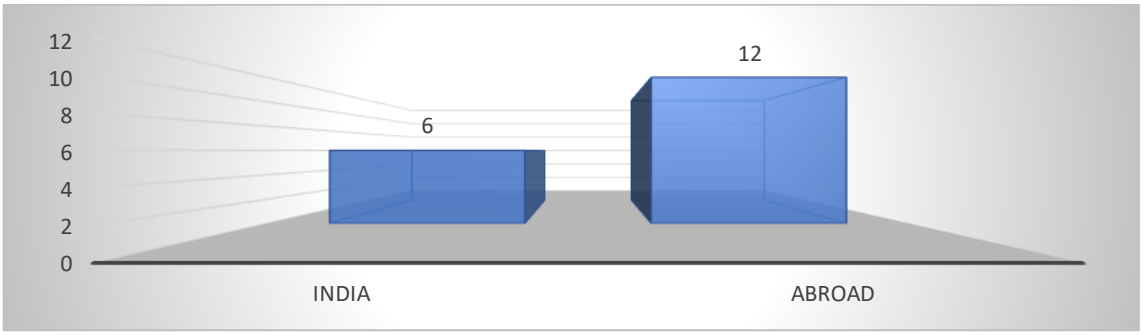


Fig. 2.4. Location-wise Distribution of the Studies on Creative Problem-solving Ability

2.4.2.3. Method-wise Distribution

The distribution across methods reveals that survey-based studies (13) dominate, with fewer experimental studies (4), and only one review study. This highlights a heavy reliance on descriptive methods and a limited presence of experimental and synthesis-focused research.

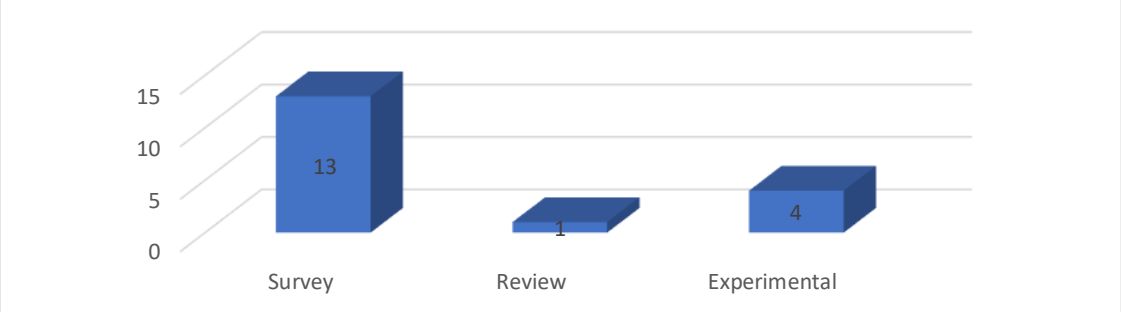


Fig. 2.5. Method-wise Distribution of the Studies on Creative Problem-solving Ability

2.4.3. Year-wise, Location-wise and Method-wise Distribution of the Studies on Educational Wellbeing

2.4.3.1. Year-wise Distribution

The year-by-year analysis shows low and scattered publication output before 2018, followed by significant growth from 2020 onward. The peak in 2021 and consistent output during 2022–2023 indicate a rising and ongoing research interest in the field in recent years.

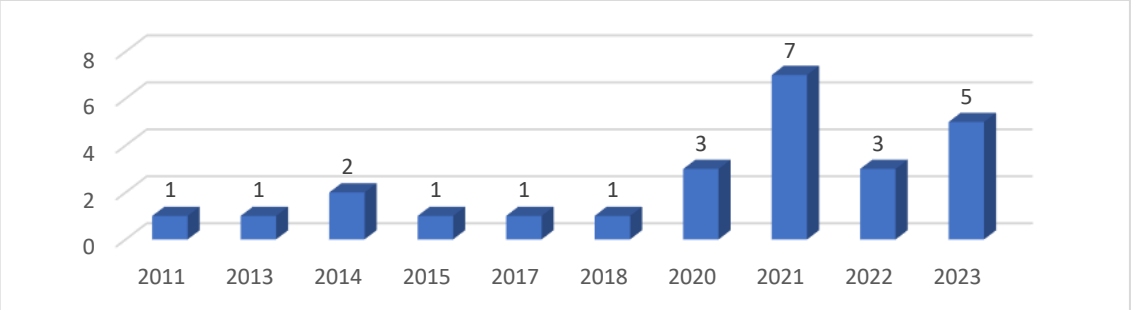


Fig. 2.6. Year-wise Distribution of the Studies on Educational Wellbeing

2.4.3.2. Location-wise Distribution

The distribution by location indicates a clear dominance of international studies (23), while research in India remains minimal (2). This reveals a notable geographical gap and underscores the necessity for more context-specific research within the Indian educational system.

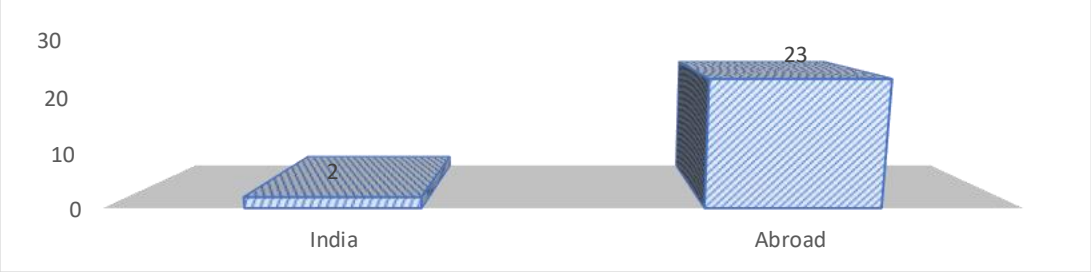


Fig. 2.7. Location-wise Distribution of the Studies on Educational Wellbeing

2.4.3.3. Method -wise Distribution

The distribution by method shows that survey-based studies (11) are most common, followed by review studies (7). In contrast, experimental and other approaches, such as case studies, developmental, mixed, correlational, and observational methods are less frequent. This indicates limited methodological diversity and a strong reliance on descriptive research designs.

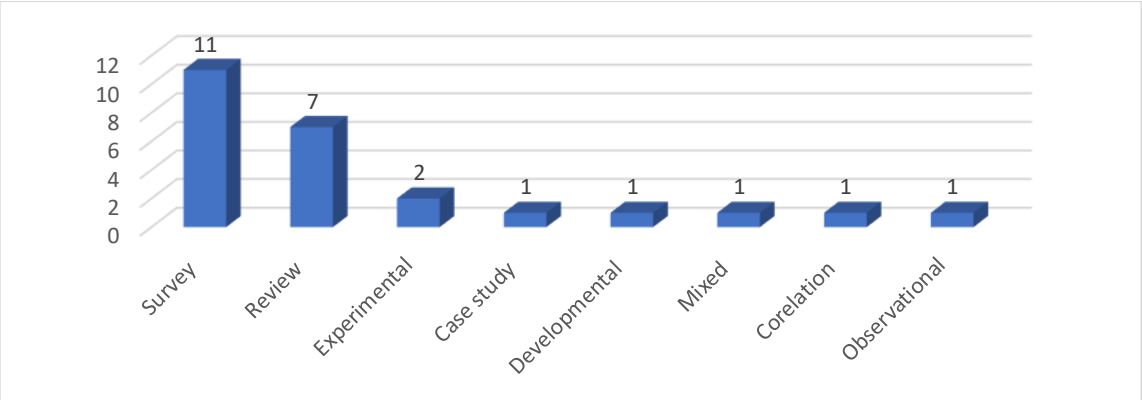


Fig. 2.8. Method-wise Distribution of the Studies on Educational Wellbeing

2.4.4. Year-wise, Location-wise and Method-wise Distribution of the Studies on Self-Efficacy

2.4.4.1. Year-wise Distribution

The year-wise distribution shows a steady increase in research output starting in 2014, with a notable rise between 2016 and 2019, peaking in 2019. The decline after 2020 indicates fluctuations in scholarly attention, suggesting that research interest grew mid-period but was not sustained in the following years.

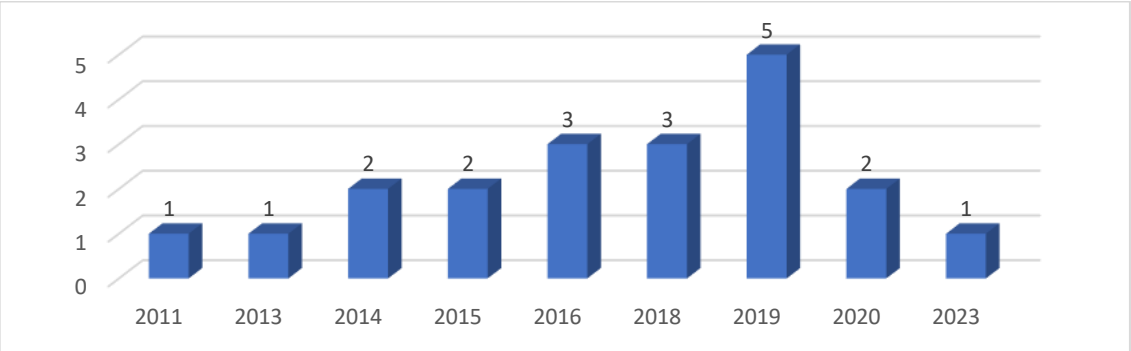


Fig. 2.9. Year-wise Distribution of the Studies on Self-efficacy

2.4.4.2. Location-wise Distribution

The analysis by location shows more international studies (16) than Indian ones (4), highlighting an uneven geographical spread and emphasising the need for more empirical research within India.

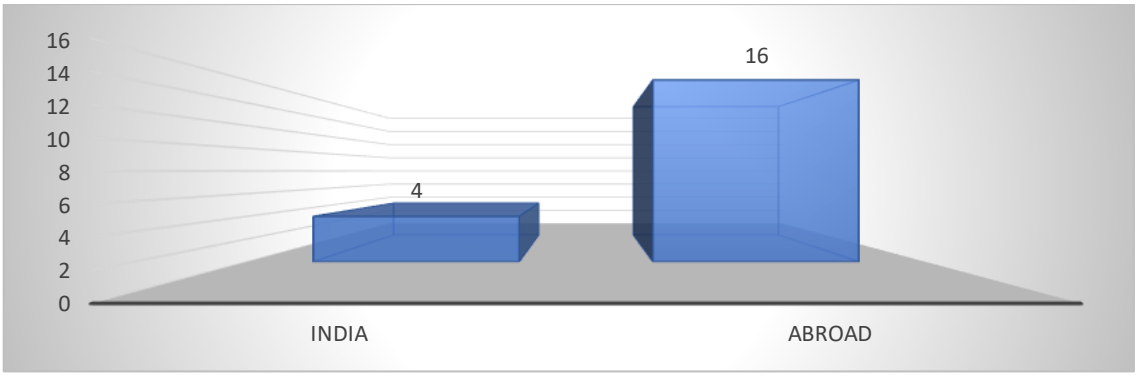


Fig. 2.10. Year-wise Distribution of the Studies on Self-efficacy

2.4.4.3. Method-wise Distribution

The distribution by method shows a clear dominance of survey-based studies (18), with only minimal use of mixed-method (1) and developmental approaches (1). This highlights a concentration on specific methodologies and a lack of variety in research designs.

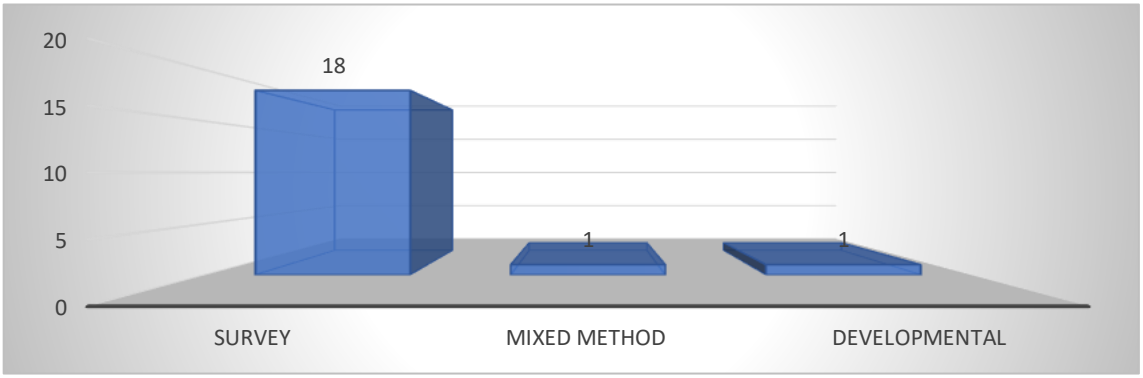


Fig. 2.11. Year-wise Distribution of the Studies on Self-efficacy

2.4.5. Year-wise, Location-wise and Method-wise Distribution of the Studies on Spiritual Practices

2.4.5.1. Year-wise Distribution

The year-wise distribution shows a low but gradually increasing research output after 2018, peaking in 2020, followed by moderate and sustained contributions during 2022–2024, indicating emerging yet still limited scholarly attention in this area.

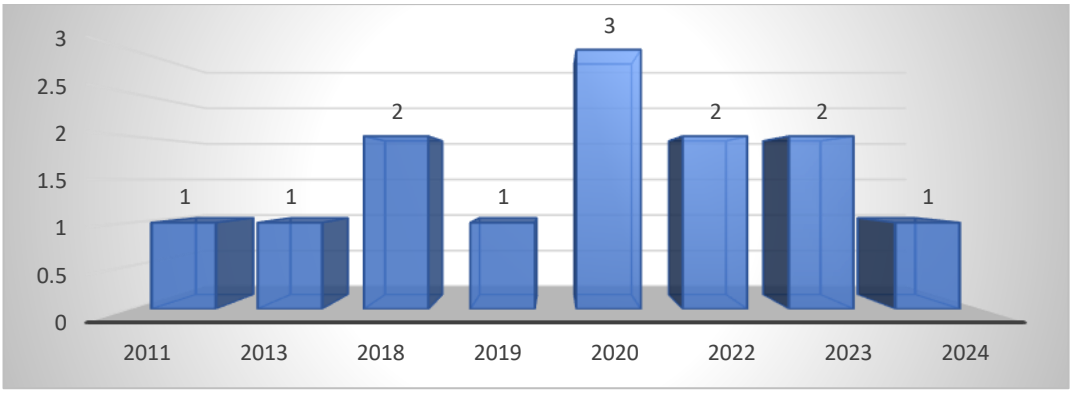


Fig. 2.12. Year-wise Distribution of the Studies on Spiritual Practices

2.4.5.2. Location-wise Distribution

The distribution by location shows that all 13 included studies were conducted internationally, with none from India. This highlights a significant geographical research gap and underscores the importance of conducting context-specific studies within the Indian setting.

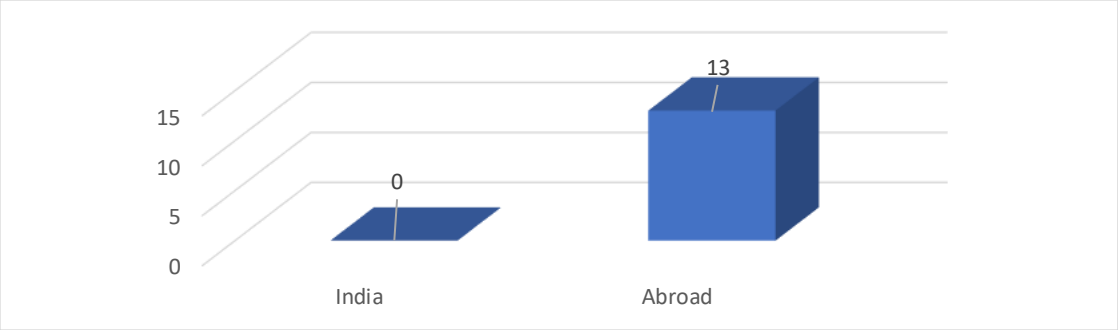


Fig. 2.13. Location-wise Distribution of the Studies on Spiritual Practices

2.4.5.3. Method-wise Distribution

The distribution by method highlights a strong reliance on survey research, with 7 studies, followed by review studies with 4, while developmental and theological approaches, each with 1 study, are scarcely represented. This suggests limited methodological diversity in the current literature.

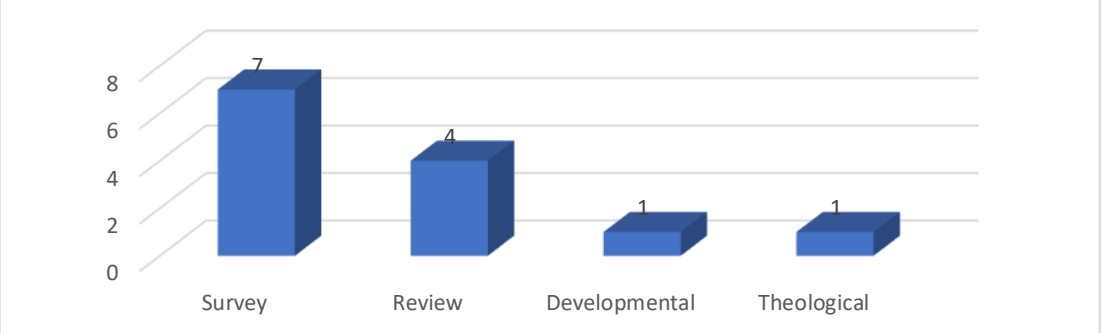


Fig. 2.14. Method-wise Distribution of the Studies on Spiritual Practices

2.4.6. Year-wise, Location-wise, and Method-wise Distribution of Studies on the Relationship among CPSA, EW, SE, and SP

2.4.6.1. Year-wise Distribution

The distribution over the years shows a significant rise in research output after 2019, especially with a notable increase in 2024 (16 studies), reflecting growing academic interest and a recent boost in research activity in this field.

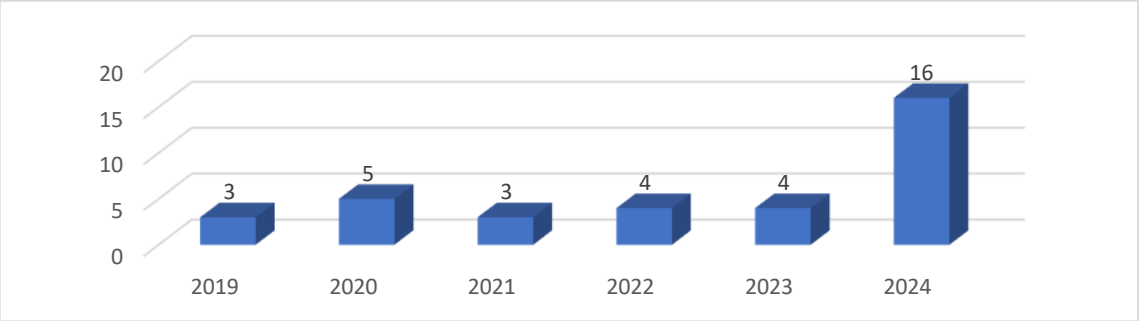


Fig. 2.15. Yearly Distribution of Studies on the Relationship among CPSA, EW, SE, and SP

2.4.6.2. Location-wise Distribution

The geographic distribution shows a balanced and globally oriented research landscape, with 20 studies conducted internationally and 15 from India. This reflects both increasing local research efforts and ongoing international collaboration.

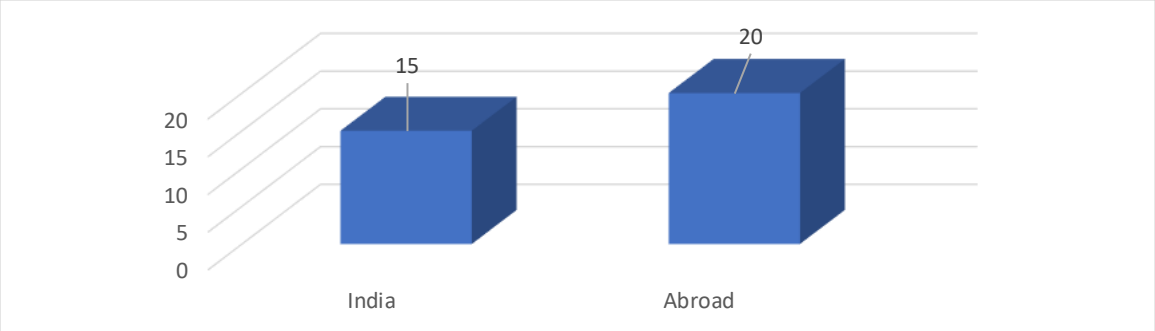


Fig. 2.16. Location-wise Distribution of Studies on the Relationship among CPSA, EW, SE, and SP

2.4.6.3. Method-wise Distribution

The distribution by method reveals a clear dominance of survey studies (24), with developmental (4) and correlational studies (4) also present. Experimental studies (2) and reviews (1) are few, highlighting a reliance on descriptive approaches and limited variation in research methods within the literature.

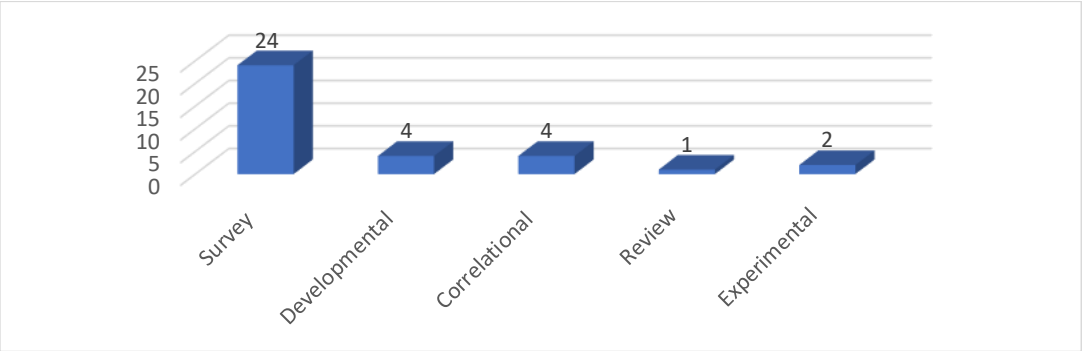


Fig. 2.17. Method-wise Distribution of Studies on the Relationship among CPSA, EW, SE, and SP

2.5. Summary of the Literature Review Trends

The review trends reveal clear patterns in research on creative problem-solving ability, educational wellbeing, self-efficacy, and spiritual practices. Over the past decade, scholarly output has gradually increased, with notable peaks from 2020 to 2024, reflecting rising academic interest in these areas. Most studies have been conducted internationally, leaving a gap in research within the Indian context and highlighting the need for localised studies. Methodologically, the field is dominated by survey-based research, with few experimental, developmental, correlational, or review studies, indicating a reliance on descriptive methods and limited methodological variety. Thematically, most research explores the interconnectedness among creative problem-solving ability, educational wellbeing, self-efficacy, and spiritual practices, while individual themes such as creative problem-solving and spiritual practices are less explored. These trends underscore the importance of increasing the number of Indian-focused, methodologically diverse, and empirically rigorous studies, especially those examining the links among cognitive, emotional, and spiritual factors in education.

CHAPTER-III
PROBLEM STATEMENT

CHAPTER-III
PROBLEM STATEMENT

3.0. Introduction

This chapter lays the foundation and setting for the study. It explains the background, assumptions, and the researcher's position in the research. The rationale for conducting the study is presented, along with a clear statement of the problem based on gaps in existing literature. Key terms are defined to promote clarity and consistency throughout. The chapter also outlines the study's objectives and hypotheses, which direct the research process, as well as the delimitations that specify its scope. Moreover, it highlights the significance of the research and features a conceptual framework that maps out the relationships among the main variables.

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

The researcher has a particular interest in school-going adolescents, arising from his master's degree dissertation, in which he conducted research on them and found various challenges during this period. the researcher studied self-efficacy and problem-solving skills, which are important for school adolescents, during his M.Phil. dissertation. However, he is also interested in practising spirituality and wellbeing. Therefore, he established an institution, "Bhalobasar Barnoparichaye Patshala," where free education is provided for Lodha tribal children at Sarta (Sabang) in Pachim Medinipur district, West Bengal, and where they participate in spirituality and well-being activities. Drawing from his own interests and prior related research, the researcher aims to determine whether adolescents at the higher secondary level are cognitively and emotionally prepared to reflect on their creative problem-solving skills, self-efficacy, educational wellbeing, and spiritual practices. The researcher maintains that quantitative methods can effectively assess these areas. The study asserts that the educational environment and experiences influence students' psychological development, including their well-being and creativity.

3.2. Rationale of the Study

Creative problem-solving ability (CPSA) is the skill to identify challenges or gaps, generate and test original ideas or hypotheses, and continually refine and re-evaluate solutions to achieve effective and innovative outcomes (Torrance, 1974). Consequently, a substantial body of research has examined CPSA across educational levels, revealing inconsistencies in the models used across contexts. Khamcharoen et al. (2021) and Sipayung et al. (2021) studied CPSA in mathematics students, while Gurdel (2015) and Rakesh and Geetha (2016) focused on secondary education. Research has also emphasised demographic and contextual factors affecting CPSA, with gender-based disparities and socioeconomic status recognised as significant influences (Rakesh & Geetha, 2016; Akdeniz & Alpan, 2020). Moreover, although studies from abroad (Western) contexts, such as Thailand (Nonthamand & Songkhla, 2017) and Indonesia (Diani, 2019), demonstrate the application of CPSA, a limited understanding remains of how cultural factors influence CPSA's effectiveness. This disparity highlights the need to study how gender, socioeconomic status, and cultural diversity influence CPSA development in secondary schools in India, with the aim of more inclusive, culturally relevant teaching.

Educational Wellbeing (EW) includes students' academic, social, and emotional experiences at school that support learning and development (Pollard & Lee, 2003). It has gained growing attention in research, especially regarding its impact on academic performance. Studies on wellbeing and learning highlight important links, but there are still gaps in how these are measured together and in understanding the relationship between wellbeing and academic achievement across different educational environments (Erdem & Kaya, 2021; Karvonen, 2018). Additionally, there is limited research on the connections between EW and socioeconomic status across various cultural contexts, especially in Western countries (Ajayi & Amole, 2021; Liu et al., 2021). The existing literature primarily focuses on Western settings, making it difficult to generalise findings globally. Moreover, interventions aimed at enhancing wellbeing, including health promotion and social-emotional learning frameworks (Pulimeno et al., 2020; Steel, 2022), show potential but lack the detailed analysis needed to fully evaluate their effect on EW, especially given the inconsistent ways wellbeing is conceptualised and assessed. Although some studies examine wellbeing using different models (e.g., hedonic and eudaimonic) (Hossain et al., 2023), agreement on the definition of wellbeing in

educational settings and on its consistent measurement across diverse student groups remains lacking. Furthermore, despite growing awareness that schools should support EW (Norwich et al., 2022; Leventhal et al., 2015), many institutions still prioritise academic achievement, often placing mental health and emotional support lower. Research indicates that programs like creative arts (Lewis, 2023), animal-assisted learning (Steel, 2022), and school-based health initiatives (Pulimeno et al., 2020) can enhance EW among school-aged adolescents.

CPSA and EW are considered fundamental to learning because they emphasise the importance of subject mastery, ongoing student development, effective learning strategies, and achieving specific solutions. Understanding the various factors that influence the process and considering them when devising solutions enhances teams' potential for innovation, CPSA, and EW. Many pupils' characteristics impact CPSA and EW. Self-efficacy and spiritual practices are also crucial elements.

Self-Efficacy (SE) refers to the confidence in one's capacity to plan and take action to handle future situations (Bandura, 1997). It is a core concept in Bandura's social cognitive theory and significantly influences students' academic performance and EW. Research indicates that students with higher SE tend to perform better academically, endure adversity, and be more resilient (Arbabisarjou et al., 2016; Yusuf, 2011; Hwang et al., 2016). Oyuga et al. (2019) and Ahmadi (2020) demonstrated SE's mediating role in linking personal and social factors to academic outcomes. SE is both a result of prior achievements and a factor influencing future performance goals. Literature suggests that demographic and environmental factors such as gender, socioeconomic status, and background impact SE (Ahuja, 2016; Sucuog, 2018; Lata, 2019). Longitudinal and structural studies reveal a reciprocal relationship: academic success enhances SE, which in turn promotes further achievement (Hwang et al., 2016; Villafana et al., 2016). Many researchers have explored the connection between academic SE and achievement, yet gaps remain in understanding the complex factors that influence this relationship across various student groups and contexts. While research demonstrates SE's ability to predict academic performance (e.g., Malpass et al., 2010; Goulão, 2014), its interaction with socioeconomic background, gender, and environment is less clear. There is a notable lack of cross-cultural and cross-context studies, especially in non-Western, rural, and developing regions, despite existing research in Western and urban settings (e.g., Loo & Choy, 2013; Kanmani, 2018). Studies by Ahmadi (2020) and Ahuja (2016) examine how

gender and residential background influence SE and academic achievement, but their findings are inconsistent, creating uncertainty about their roles across diverse educational and cultural environments. Current research largely focuses on either SE or academic success independently, often neglecting their reciprocal relationship. The impact of external support, such as family social support, and its interaction with SE remains underexplored (Kleppang et al., 2023; Andretta et al., 2020).

Spiritual Practices (SP) are intentional acts that deepen awareness of the sacred or strengthen connections with the transcendent, others, or oneself, and they significantly impact wellbeing across psychological, physical, and social domains (Pargament, 1999). Spiritual activities such as prayer, meditation, and community involvement serve as vital coping mechanisms that bolster resilience during stress and health crises (Prasetyo et al., 2023; Pratiwi & Wijhati, 2023). Religious and spiritual beliefs enhance resilience and eudaimonic wellbeing by providing meaning and purpose, fostering lasting life satisfaction aligned with personal values (Choi & Hastings, 2019; Ryff, 2021; Akbayram & Keten, 2024). Spirituality offers purpose, meaning, and connection, crucial for psychological wellbeing (Collier et al., 2024; Supriatna & Septian, 2021). During crises, SP strengthen resilience and help manage stress, uncertainty, and hardship (Baykal, 2020; Diego-Cordero et al., 2022), which encourages prosocial behaviors such as volunteering and promotes social cohesion (Yousaf, 2024; King et al., 2024). It is also influenced by cultural and contextual factors, with benefits maximised through culturally sensitive interventions (Singh et al., 2020; Cid et al., 2021), which are essential aspects of wellbeing. However, SP should be more deeply integrated into healthcare organisations and communities, affecting psychological, physical, and social health and wellbeing (Darvyri et al., 2018; Kubzansky et al., 2018). It fosters a comprehensive, personalised care approach that impacts physical, emotional, and existential wellbeing, reduces stress, and boosts life satisfaction (Rahim Zahedi et al., 2021). Additionally, SP offers social and psychological support, including resilience, a sense of belonging, and connectedness, which can help mitigate stigma, discrimination, and societal pressures (McCann et al., 2020; Howard et al., 2023; Kane, 2024).

The literature review uncovers a knowledge gap at the intersection of CPSA and SE (Stolz et al., 2022; Reiter-Palmon, 2017). Studies such as Yuliani et al. (2019) found no link between SE and CPSA in math, despite high SE, showing that SE boosts confidence but doesn't always improve CPSA. Baity et al. (2021) and Wulandari and Asikin (2019)

demonstrate that CPS models improve students' ability. Research on learning barriers, such as that by Supandi et al. (2021), emphasises the need to examine how external and internal factors interact within CPSA. These studies focus on specific groups, highlighting the importance of broader research involving diverse populations, disciplines, and settings.

Current research highlights the benefits of SP for hope, mindfulness, and SE, but the mechanisms underlying these benefits and their relevance across contexts remain understudied. Carter (2022) and Carter (2020) found that SP fosters positive traits such as hope and forgiveness, thereby mediating the link between environmental support and SE among students. However, perspective-taking did not significantly affect this relationship, despite being a potential moderating factor.

Research shows a knowledge gap regarding how SE affects EW across different student groups and educational settings. While many studies link SE to wellbeing, the exact ways it impacts mental health issues like anxiety, stress, depression, and motivation are underexplored. Studies on school students, such as Zamfir and Mocanu (2020) highlight the perceived role of academic SE in boosting wellbeing, motivation and reducing worry. However, we lack an understanding of how academic SE influences long-term psychological wellbeing, such as resilience and social support, which are affected by external factors, including family and social interactions. The effect of SE on EW in unconventional settings, such as martial arts (Moore et al., 2023) and coping strategies (Turashvili & Turashvili, 2015), warrants further research to connect to broader wellbeing frameworks, including gender, social ties, and education. Bottomley et al. (2023) found that the relationships among SE, belonging, and wellbeing are complex, especially regarding gender, indicating the need for further study.

Although SE is a key factor in wellbeing, its mechanisms that affect outcomes such as resilience, stress reduction, and motivation remain underexplored across diverse contexts. Research shows its positive effects on students' academic experiences, instructors' resilience, and carers' stress (Reppa et al., 2023; Giallo et al., 2011; Zamfir & Mocanu, 2020). There is limited understanding of how strategies that enhance SE lead to lasting mental health improvements, or how external factors such as social support, culture, and environment influence these effects. Evidence from physical training and recovery programs (Moore et al., 2023) suggests a more complex relationship that extends beyond

traditional frameworks. The impact of SE on wellbeing, especially in education, warrants further research to develop tailored interventions that promote wellbeing, notably among adolescents.

The current body of research highlights the importance of CPSA and EW in promoting academic success and overall wellbeing among adolescents; however, significant gaps remain in understanding how these factors interact across different contexts. Although studies have examined CPSA, EW, SE, and SP individually, less attention has been given to their interconnections, especially among school-going adolescents in specific cultural and geographical settings. SE is an essential psychological factor influencing CPSA and EW. Meanwhile, SP have shown potential to enhance resilience, coping strategies, and overall life satisfaction, indicating EW. Still, there is a lack of comprehensive research on how SE and SP influence the relationship between CPSA and EW. Addressing this gap is especially important for adolescents, who face unique developmental, intellectual, and socio-emotional challenges during their school life. Therefore, studying these interactions among school-going adolescents will improve theoretical understanding and provide practical guidance for educators and policymakers to develop interventions that promote creativity, strengthen resilience, and create supportive educational environments.

The literature on CPSA, EW, SE, and SP showed that, although researchers have conducted numerous studies in these areas, they still need focused scholarly attention. Previous studies have primarily examined these constructs either individually or in pairs, often in relation to academic achievement. However, most of this research has been conducted outside India, with only a limited number of studies done nationally and none specifically in West Bengal. Additionally, research has extensively explored areas of wellbeing, including student wellbeing, teacher wellbeing, psychological wellbeing, and subjective wellbeing. Nevertheless, there have been few studies on EW abroad, very few in India, and none in West Bengal.

Furthermore, while some studies have explored CPSA, EW, SE, and SP with respect to one or two demographic variables, no comprehensive research has addressed these factors together, especially considering demographic variables such as gender, family type, number of siblings, stream of education, study hours, and parents' educational qualification. A similar research gap exists in studies on EW, SE, and SP among school-going adolescents. Although some researchers have examined the correlations among SE,

CPSA, SP, and EW, none have explored the relationships between CPSA and EW or between CPSA and SP. Likewise, researchers have not found the interrelationships among all four variables in a single study. There appears to be no research that simultaneously investigates the combined influence of SE and SP on CPSA and EW. In particular, no such studies have been conducted in West Bengal, India.

Based on the researchers' personal experience, rationale, theoretical foundations, expert opinions, and field observations, the investigator identified important research gaps. These gaps motivated the researcher to conduct a comprehensive study on CPSA and EW among school-going adolescents, while considering the effects of SE and SP in the specific context of West Bengal, India. As a result, several research questions have arisen for the researcher.

1. What are the levels of CPSA, EW, SE, and SP among school-going adolescents?

2. How do CPSA, EW, SE, and SP differ among school-going adolescents across various demographic factors?

3. What patterns of relationships exist among CPSA, EW, SE, and SP in school-going adolescents?

4. Do SE and SP mediate the relationship between CPSA and EW among school-going adolescents?

Therefore, a thorough investigation is necessary to examine the CPSA, SE, SP, and EW among school-going adolescents in West Bengal, while accounting for various demographic factors, to address the concerns raised and close the information gaps identified in earlier studies.

3.3. Statement of the Problem

Based on the comprehensive literature review, current research trends, research questions, the researcher's assumptions and positionality, the rationale, the identified research gaps, and research questions, the problem for the present study can be stated as **"*Creative Problem-solving Ability and Educational Wellbeing among School-going Adolescents: The Mediating Effects of Self-efficacy and Spiritual Practices*".**

3.4. Operational Definitions of the Major Terms Used

The operational definitions for the key terms outlined in the problem statement are as follows.

Creative Problem-Solving Ability: Creative Problem-Solving Ability refers to a person's skill to successfully navigate new or difficult situations by developing original, practical, and suitable solutions through adaptable and innovative thinking. In the present study, CPSA is defined as students' ability to address problem situations by employing planning, decision-making, innovation, flexible thinking, and the formation of new combinations of ideas to overcome obstacles and attain desired outcomes. It is operationalised as the assessment of creative, critical, and integrative thinking through open-ended problem situations.

Educational Wellbeing: EW refers to the extent to which learners experience positive emotional states and minimal negative ones in educational settings that support their learning, personal development, and long-term educational outcomes. In this study, EW represents students' wellbeing in the educational setting, evaluated across aspects such as satisfaction with learning, academic engagement, motivation and aspiration, a positive attitude toward learning, a sense of belonging, academic achievement, a supportive learning environment, and students' perceptions of their own competence.

Self-Efficacy: SE is an individual's belief in their ability to perform tasks successfully and handle challenging situations, which influences motivation, persistence, and performance. In the present study, Self-Efficacy is defined as students' confidence in their academic abilities, demonstrated through their beliefs in learning, problem-solving skills, motivation to engage with tasks, persistence, and perseverance in difficult circumstances.

Spiritual Practices: SP are regular activities or rituals that individuals engage in to nurture the inner self, develop a sense of meaning or purpose, and cultivate feelings of peace, compassion, or transcendence, whether religious or non-religious. In the present study, SP are defined as the extent to which students engage in practices aimed at inner growth and meaning-making, assessed along the dimensions of reflection, mindfulness, sense of connection, and devotional or contemplative activities.

School-going Adolescents: Adolescents are individuals who fall within the developmental age range of approximately 12 to 19 years, characterised by significant physical, cognitive, emotional, and social changes. In this study, School-Going

Adolescents specifically mean students aged around 16 to 19 years who are enrolled in Classes XI and XII under the West Bengal Council of Higher Secondary Education (WBCHSE).

3.5. Objectives of the Study

The present research was undertaken to meet the following objectives:

1. To assess the level of creative problem-solving ability, self-efficacy, and educational wellbeing among school-going adolescents.
2. To examine the extent of Spiritual Practices among school-going adolescents.
3. To compare creative problem-solving ability, educational wellbeing, self-efficacy, and spiritual practices of school-going adolescents across demographic factors such as gender, family type, number of siblings, stream of education, study hours, father's educational qualification, and mother's educational qualification.
4. To explore the patterns of relationship among creative problem-solving ability, self-efficacy, spiritual practices, and educational wellbeing in the school-going adolescents.
5. To measure the influence of self-efficacy on creative problem-solving ability among school-going adolescents.
6. To measure the influence of spiritual practices on creative problem-solving ability among school-going adolescents.
7. To measure the combined influence of self-efficacy and spiritual practices on creative problem-solving ability among school-going adolescents.
8. To measure the influence of self-efficacy on educational wellbeing among school-going adolescents.
9. To measure the influence of spiritual practices on educational wellbeing among school-going adolescents.
10. To measure the combined influence of self-efficacy and spiritual practices on educational wellbeing among school-going adolescents.
11. To measure the influence of creative problem-solving ability on educational wellbeing among school-going adolescents.
12. To explore the combined contribution of creative problem-solving ability, self-efficacy, and spiritual practices on predicting the variances in educational wellbeing among school-going adolescents.

13. To examine whether self-efficacy mediates the relationship between creative problem-solving ability and educational wellbeing among school-going adolescents.
14. To examine whether spiritual practices mediate the relationship between creative problem-solving ability and educational wellbeing among school-going adolescents.
15. To assess the combined mediating effect of self-efficacy and spiritual practices in the relationship between creative problem-solving ability and educational wellbeing among school-going adolescents.

3.6. Hypotheses of the Study

The following hypotheses were developed for testing based on the research problems and objectives.

$H_0$1: There is no significant difference in creative problem-solving ability among school-going adolescents with respect to gender, family type, number of siblings, stream of education, study hours, father's educational qualification, and mother's educational qualification.

$H_0$2: There is no significant difference in educational wellbeing among school-going adolescents with respect to gender, family type, number of siblings, stream of education, study hours, father's educational qualification, and mother's educational qualification.

$H_0$3: There is no significant difference in self-efficacy among school-going adolescents with respect to gender, family type, number of siblings, stream of education, study hours, parents' educational qualification, and mother's educational qualification.

$H_0$4: There is no significant difference in spiritual practices among school-going adolescents with respect to gender, family type, number of siblings, stream of education, study hours, father's educational qualification, and mother's educational qualification.

$H_0$5: There is no significant relationship among creative problem-solving ability, educational wellbeing, self-efficacy, and spiritual practices among school-going adolescents.

$H_0$6: Self-efficacy does not significantly influence creative problem-solving ability among school-going adolescents.

$H_0$7: Spiritual practices do not significantly influence creative problem-solving ability among school-going adolescents.

$H_0$8: There is no significant combined effect of self-efficacy and spiritual practices on creative problem-solving ability among school-going adolescents.

$H_0$9: Self-efficacy does not significantly influence educational wellbeing among school-going adolescents.

$H_0$10: Spiritual practices do not significantly influence educational wellbeing among school-going adolescents.

$H_0$11: There is no significant combined contribution of self-efficacy and spiritual practices in predicting educational wellbeing among school-going adolescents.

$H_0$12: Creative problem-solving ability does not significantly influence educational wellbeing among school-going adolescents.

$H_0$13: There is no significant combined contribution of creative problem-solving ability, self-efficacy, and spiritual practices in predicting educational wellbeing among school-going adolescents.

$H_0$14: Self-efficacy does not significantly mediate the relationship between creative problem-solving ability and educational wellbeing among school-going adolescents.

$H_0$15: Spiritual practices do not significantly mediate the relationship between creative problem-solving ability and educational wellbeing among school-going adolescents.

$H_0$16: Self-efficacy and spiritual practices do not significantly mediate the relationship between creative problem-solving ability and educational wellbeing among school-going adolescents.

3.7. Delimitations of the Study

Due to the specific study objectives, time, resources, and other social constraints, the present study is delimited to the following areas:

1. The geographical scope of the study was confined to Purba Medinipur and Paschim Medinipur districts of West Bengal.

2. Data were collected from 12 higher secondary schools selected from six blocks across the two districts.
3. The sample of the study included only Higher Secondary (HS) level students belonging to the Science and Arts streams.
4. The study was restricted to rural-area, Bengali-medium students enrolled under the West Bengal Council of Higher Secondary Education (WBCHSE) during the 2025–26 academic session.
5. The sample comprised only those students who were present in school on the day of data collection and were randomly selected for participation.
6. The total sample size of the study consisted of 720 school-going adolescents.
7. The study was delimited to the measurement of seven demographic variables, namely gender, family type, number of siblings, stream of education, study hours, father's educational qualification, and mother's educational qualification.

3.8. Conceptual Framework of the Study

The researcher developed a conceptual framework illustrating the relationships between creative problem-solving ability (CPSA), educational wellbeing (EW), self-efficacy (SE), spiritual practices (SP), and demographic factors among adolescents at the higher secondary level. This framework builds on the theoretical and conceptual perspectives outlined in Chapter I. The study's conceptual framework is as follows:

Independent Variables: Demographic Factors, CPSA, SE, and SP.

Dependent Variables: SE, SP, CPSA, and EW.

Mediating Variables: SE and SP

3.8.1. Theoretical Links:

- ***Osborn–Parnes Creative Problem-Solving Model (***1977***):*** The Osborn–Parnes Creative Problem-Solving Ability (CPSA) Model explains how individuals generate, evaluate, and implement creative solutions using divergent and convergent thinking. It highlights planning, flexibility, originality, and decision-making as key to creative problem-solving. In this study, the CPSA model helps understand how adolescents approach academic and real-world problems creatively and how this ability impacts their educational wellbeing.

- ***Bandura's Social Cognitive Theory of Self-Efficacy (1986):*** Bandura's Social Cognitive Theory of Self-Efficacy explains how beliefs in abilities influence motivation, effort, persistence, and performance. This study uses the theory to highlight the role of self-efficacy in adolescents' engagement, challenge-handling, and perseverance in learning. It supports exploring how self-efficacy impacts creative problem-solving and educational wellbeing.
- ***Konu and Rimpelä's School Well-Being Model (2002):*** Konu and Rimpelä's School Well-Being Model links students' wellbeing to a broader ecological context, highlighting supportive environments, relationships, and personal growth. It supports assessing wellbeing as influenced by individual and environmental factors.
- ***Seligman's PERMA Model of Well-Being (2011):*** Seligman's PERMA Model of wellbeing isn't directly linked to this study but offers a strong foundation for understanding educational wellbeing through aspects like satisfaction, motivation, belonging, achievement, and perceived competence in adolescents. It shows that students' wellbeing is influenced by cognitive and emotional strengths.
- ***Fowler's Faith Development Theory (1981) of Spiritual Practices:*** This theory is not directly linked to this study. Instead, it offers a basis for viewing spiritual practices as adolescents' search for meaning, purpose, and coherence. It helps explore how spiritual engagement affects students' emotional stability, self-beliefs, and educational wellbeing.
- ***Roeser's Neurocognitive Model of Spiritual Practice (2012)****:* This theory is not directly linked to the study. The model offers a foundation for exploring how spiritual practices boost adolescents' self-efficacy, creative problem-solving, and educational wellbeing by improving neurocognitive and emotional regulation.

3.8.2. Hypothesized Relationships:

- **Prevalence Rates → CPSA, EW, SE, and SP:** These are the prevalence rates that explore the significant CPSA, EW, SE, and SP.
- **Demographic Factors → CPSA, EW, SE, and SP**: Demographic factors may influence CPSA, EW, SE, and SP.
- **CPSA, SE, and SP → EW: CPSA, SE, and SP** are hypothesised to influence **EW**.

3.8.3. Visual Representation:

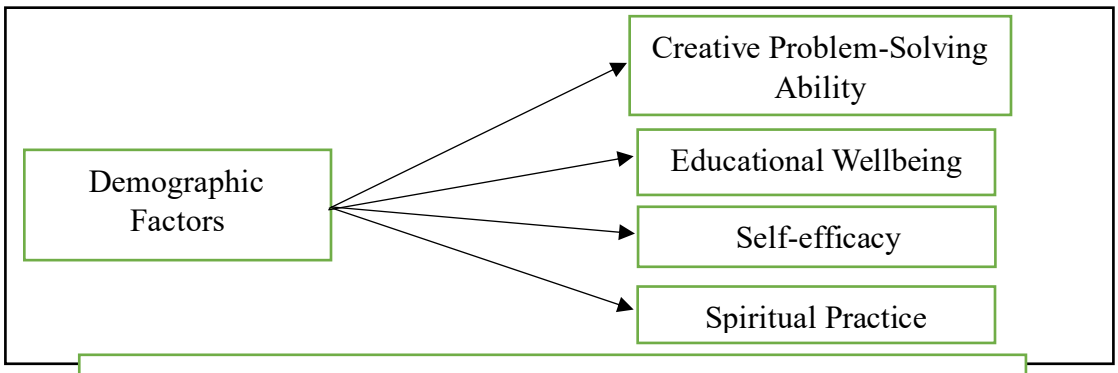


Fig.3.1. Visual Representation Hypothesized Variation

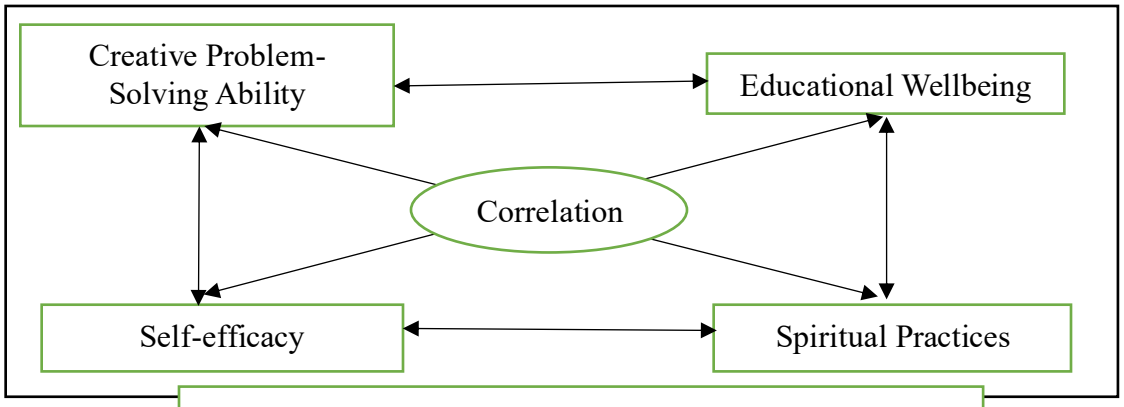


Fig. 3.2. Conceptual Framework of Correlation

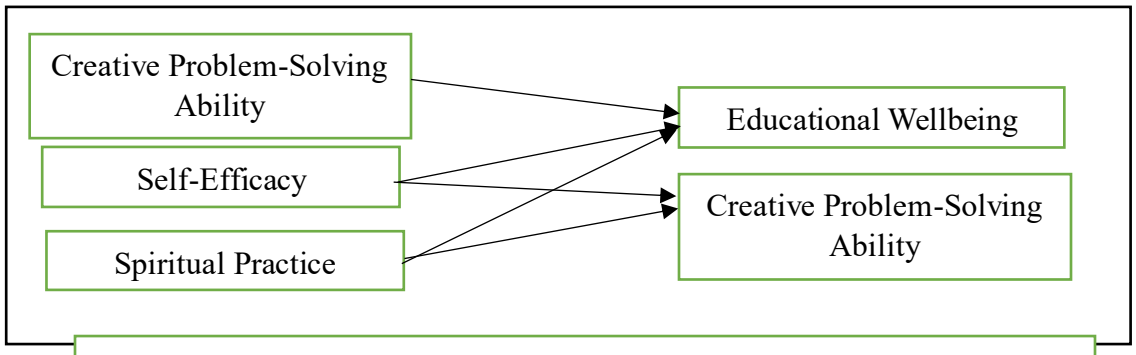


Fig. 3.3. Influences of Independent variables on Dependent Variables

It was conceptualised that CPSA directly and indirectly affects the overall EW. Therefore, it was hypothesised that CPSA directly affects SE [Path-a1], SE directly affects EW [Path-b1], CPSA directly affects EW [Path-c], and finally, CPSA indirectly affects EW through SE [Path-c´1]. Similarly, CPSA directly affects SP [Path-a2], SP directly affects EWB [Path-b2], CPSA directly affects EW [Path-c], and finally, CPSA indirectly affects EW through SP [Path-c'2]. The conceptual framework is illustrated below:

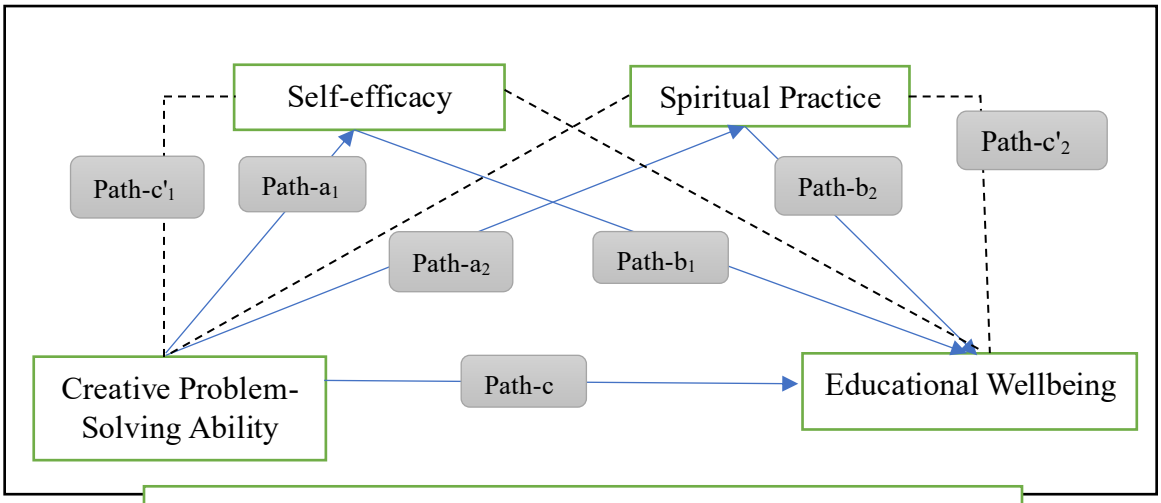


Fig. 3.4. Conceptual Frame Work of the Study (Path Analysis)

The researcher aimed to thoroughly examine the complex relationships among key variables and theoretical constructs in this study using this conceptual framework, which provided valuable insights into the factors influencing CPSA, SE, SP, and EW among school-going adolescents. The framework guided data collection, analysis, and interpretation, enabling a comprehensive understanding of the phenomenon being studied.

CHAPTER-IV

METHODOLOGY OF THE STUDY

CHAPTER-IV
METHODOLOGY OF THE STUDY

4.0. Introduction

The success and quality of any research depend on the methodology employed (Sahu, 2013). Properly identified and applied methods can enhance the validity and predictability of the research outcomes (Blackford, 2017). This chapter describes the methodology used in the current study, including the research design, study location, participants, variable descriptions, methods and procedures, and tools and techniques for data collection and analysis. It also discusses the assumptions, limitations, and ethical considerations necessary for validating the study and analysis designs.

4.1. Research Design

In the present study, a quantitative, descriptive and survey method with a cross-sectional design was employed to measure and test the connections among variables. This design was selected as there is an interest in exploring the relationship between the defined and measured variables (Appelbaum et al., 2018). Furthermore, this method enables the investigator to extrapolate the results to a broader demographic (Creswell, 2014). This type of study involves collecting data at a specific moment in time from a designated population sample (Lavrakas, 2008). Lavrakas (2008) highlighted that this design was used to identify the trend or common pattern in the collected data. Therefore, it was considered suitable for this study. The specific research design is given in Fig. 4.2 in the last section of this chapter.

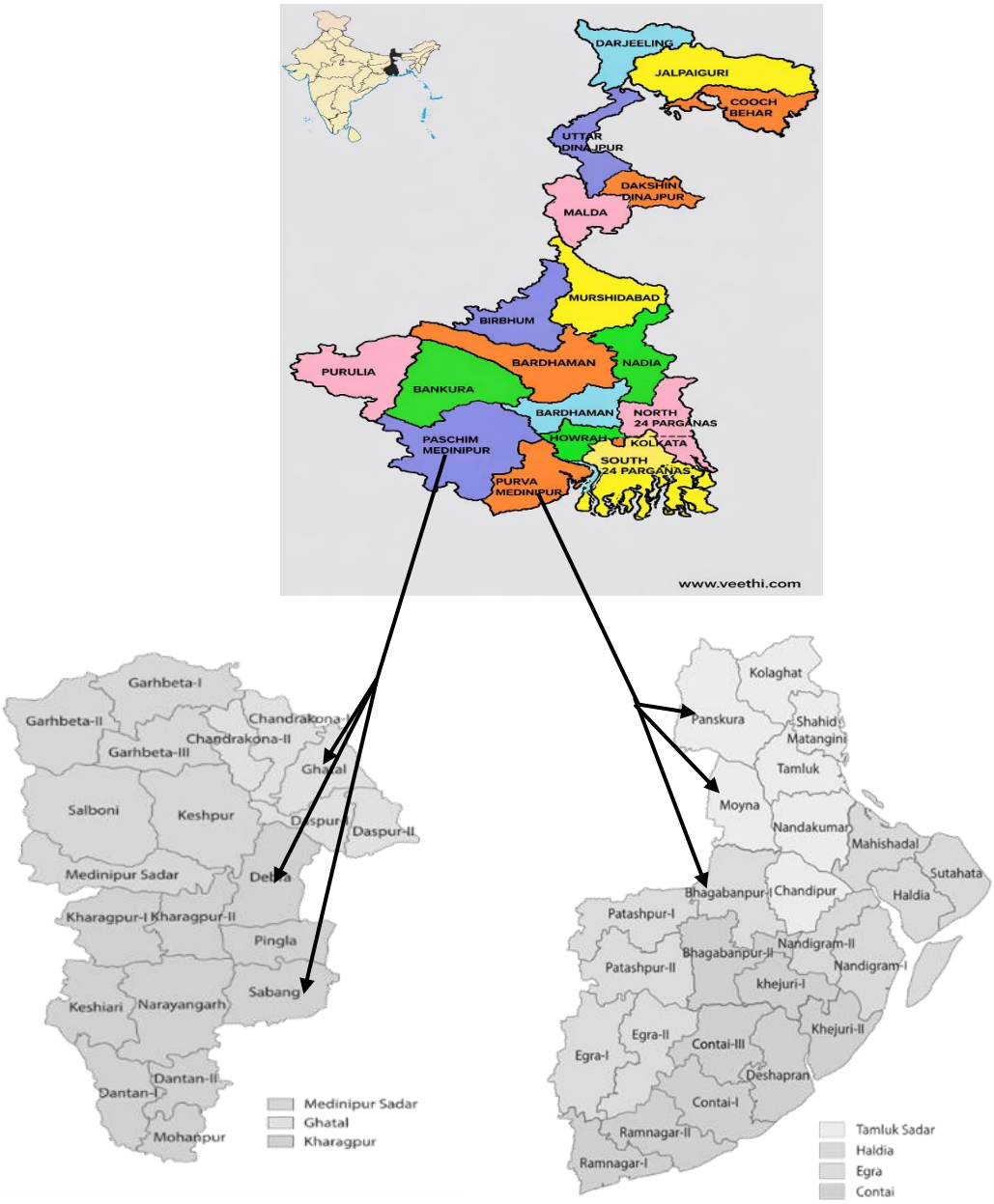
4.2. Locale of the Study

The researcher carried out the study across two districts in West Bengal, India—Purba Medinipur and Paschim Medinipur—selecting six schools from each district. Purba Medinipur is a coastal district in southeastern West Bengal, known for its fertile farmland, strong rural communities, and rising literacy rates. Established in 2002 following the split of the former Medinipur district, it has Tamluk as its administrative centre. The district spans about 4,713 square kilometres. As of the 2011 census, it had a population of 5,095,875, with a density of 1,076 people per square kilometre. Bengali is the main

language, spoken by 98.31% of people. The economy mostly depends on agriculture and fishing, with small businesses and tourism, especially in Digha, a popular beach spot, also playing a major role. The 2011 census reports that Purba Medinipur is among West Bengal's most literate districts, with a literacy rate of 88.60%. Despite this, socioeconomic disparities persist among marginalised groups, limiting access to education and jobs for some.

Paschim Medinipur is a large district located in western West Bengal, known for its diverse population, rich cultural history, and prominent tribal communities. It was formed in 2002 following the division of the old Medinipur district, with Midnapore town serving as its administrative centre. The district features a varied landscape, including forested and lateritic zones in Jungle Mahal and fertile plains in the east. The rivers Kangsabati and Subarnarekha traverse the area, supporting agriculture, which remains the primary economic activity, as well as forestry and small industries. Covering about 9,295.28 square kilometres, the district had a population of 5,913,457 in 2011, with a density of 636 persons per square kilometre. Kharagpur, in particular, is home to residents from many linguistic backgrounds, of which 87.15% speak Bengali as their first language. The district is also notable for its sizable populations of Scheduled Tribes, including Santal, Lodha, and Sabar groups, and has historically been a hub for tribal resistance and movements. Challenges persist in education, with inadequate infrastructure and high dropout rates, especially among tribal and remote populations. Despite government initiatives to improve accessibility and literacy, these issues continue. The 2011 Census reports an overall literacy rate of 79.04%, with 33.96% literacy among Scheduled Tribes and Castes 19.08% for Scheduled Castes and 14.88% for Scheduled Tribes.

Furthermore, Purba Medinipur shows notable educational outcomes, characterised by high literacy rates and progress in female education; however, marginalised groups still face challenges. Paschim Medinipur has many tribal communities, and although the government is working to address these issues, the area continues to struggle with education, infrastructure, and economic development. This indicates that disparities in access to schools and educational achievement still exist. However, the study location is shown in Fig. 4.1.



Paschim Medinipur Purba Medinipur

Fig. 4.1. Geographical Location of the Study

4.3. Participants of the Study

4.3.1. Population of the Study

This study focuses on adolescents attending school under the West Bengal Council of Higher Secondary Education (WBCHSE) in West Bengal. According to the WHO, adolescence in the Indian context ranges from 10 to 19 years, including school-going adolescents in West Bengal. In this study, participants are adolescents aged 16 to 19 years attending higher secondary schools. The total number of higher secondary school students

in West Bengal is 1274036 for the session 2025-26. In Purba Medinipur district, approximately 117,500 students are enrolled for the same session (XI: 59,000; XII: 58,500). In Paschim Medinipur district, about 104,900 students are enrolled (XI: 51,500; XII: 53,400).

4.3.2. Determination of the Sample Size

For any sample-based survey, the sample should be a representative group of the entire population on which the study is centred. In this study, the researcher first determined the actual sample size and then selected a representative sample. The researcher first used Krejcie and Morgan's (1970) formula to determine the necessary sample size, aiming for sufficient representativeness and reduced bias. Based on this method, for a finite population of 1274036, the recommended sample size is approximately 384. To verify this outcome, the researcher also utilized the Raosoft online sample size calculator. Setting a 5% margin of error, a 95% confidence level, and assuming a response rate of 50% (Aliyu et al., 2019; Ahmat et al., 2018), the calculator also indicated a required sample size of 384. The Raosoft tool was chosen for its simplicity, reliability, and validity in sample size estimation. Therefore, for this study, the minimum required sample size was set at 384 or above. Table 4.1 displays the formula provided by Krejcie and Morgan (1970).

Table 4.1. The Sample Size Determination Formula

'S= X^2 N P (1-P) / d^2 (N-1) + X^2 P (1-P)'
'Where: S= Sample size
X^2 = Chi-square value for 1 degree of freedom at the desired confidence level (3.841 at 95% confidence)
N = Population (1274036)
P = population proportion (assumed to be 0.5 for maximum variability)
d^2 = margin of error (0.05)'

4.3.3. Sampling Procedure and Sample of the Study

In this study, the researcher used two sampling methods: schools were chosen through multistage convenience sampling, while participants were selected via simple random sampling (see Table 4.2). For the selection of schools, the researcher first chose Purba Medinipur and Paschim Medinipur districts in West Bengal, India. Then, the researcher conveniently selected two subdivisions from each district. Consequently, blocks were

selected from these subdivisions. Finally, two schools were chosen from each block. After selecting the schools, the researcher communicated with the school authorities to fix a date and time for data collection. On the scheduled day, the researcher, with the help of the head teacher or the respective teachers, gathered all students present at the higher secondary levels (Arts and Science) and randomly selected an equal number of boys and girls. The participants (sample) were selected using simple random sampling. A total of 804 students were randomly selected from these twelfth-grade H.S. schools. After data collection, the researcher reviewed the data for 14 participants who did not return the questionnaires, and responses from 42 participants were incomplete. Following data cleaning and screening, the researcher rejected 28 participants due to outliers. The missing, incomplete, and outlier data were excluded. Ultimately, the study's final sample consisted of 720 students.

Table 4.2. Showing Sampling Procedure

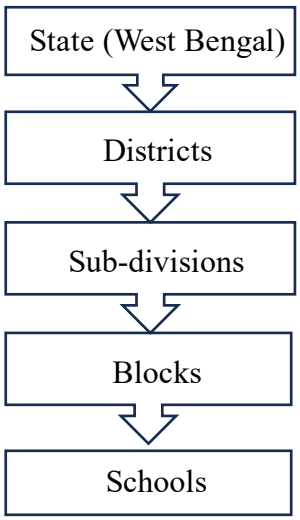
Selection	**Sampling Technique**	**Process**
Schools	Multistage Convenience Sampling	
Participants	Simple Random sampling	Lottery

Table 4.3. The Details of the Total Number of Data Collected from Various Schools

District	**Subdivision**	**Blocks**	**School Name**	**No of Students**
Paschim Medinipur	Kharagpur	Sabang	Malpar Vivekanda Sikshaniketan	70
			Dasagram S. S. Sikshasadan	66
		Debra	Balichak Bhajahari Institution	68

			Radhamohanpur Vivekananda High School	66
	Ghatal	Gharal	Natuk Vivekanada Bidyamandir	64
			Ghatal Vidyasagar High School	66
Purba Medinipur	Tamluk	Moyna	Kumarchak J. K. Sikshaniketan	70
			Dakshin Changrachak Sukanta Vidyapith	66
		Panskura	Pasnkura Bradley Birt High School	66
			Bhogpur Kenaram Memorial High School	64
	Egra	Bhagabanpur	Bhimeswari Uchcha Sikshayatan	68
			Siulipur Paschimbar High School	70

Table 4.4. Demographic Profile of the Participants

Sl.No.	Variables	Categories	N	Percentage (%)	Total
1	Gender of the Participant	Boys	360	50	720
		Girls	360	50	
2	Family Type of the Participant	Joint	218	30.3	720
		Nuclear	502	69.7	
3	Number of Siblings of the Participant	Single Child	114	15.8	720
		Having One Sibling	434	60.3	
		Having Two Siblings	131	18.2	
		Having Three or More Siblings	41	5.7	
4	Participant's Stream of Education	Arts	404	56.1	720
		Science	316	43.9	
5	Study Hours of the Participant	Up to Two Hours	84	11.7	720
		Three to Five Hours	289	40.1	
		Six to Eight Hours	258	35.8	
		Nine and Above Hours	89	12.4	
6		Up to Class Eight	233	32.4	720
		Class Nine and Ten	209	29.0	

	Father's Educational Qualification of the Participant	Class Eleven and Twelve	177	24.6	
		Above Class Twelve	101	14.0	
7	Mother's Educational Qualification of the Participant	Up to Class Eight	250	34.7	720
		Class Nine and Ten	331	46.0	
		Class Eleven and Twelve	99	13.8	
		Above Class Twelve	40	5.6	

4.4. Description of the Variables under Consideration

4.4.1. Demographic Factors (Independent Variables)

In this study, the researcher used demographic variables known as independent variables. The researcher manipulates, measures, or selects these variables to determine their relationship to an observed event (Subramaniam, 2022). The study mentions socio-demographic and educational factors. The researcher classifies all seven demographic factors into two categories: socio-demographic and educational variables. These variables are considered independent variables in the current study.

4.4.1(a). Socio-demographic factors

1. **Gender of the participant:** In the present study, the researcher considered gender as an independent variable. The researcher divided this variable into two categories: Boys and Girls.
2. **Family Type of the participant:** The researcher included family type as an independent variable, dividing it into two categories: Joint Family and Nuclear Family.
3. **Number of Siblings of the participant:** The researcher also considered the number of siblings as an independent variable and categorised it into four groups: Single Child, having one sibling, having two siblings, and having three or more siblings.

4.4.1(b) Educational Factors

4 **Participant's Stream of Education:** The researcher included the stream of education as an independent variable, dividing it into two categories: Arts and Science.

5 **Study Hours of the participant:** The researcher treated daily study hours as an independent variable and categorised them into four groups: up to 2 hours, 3 to 5 hours, 6 to 8 hours, and 9 hours and above.

6 **Father's Educational Qualification of the participant:** The researcher treated father's educational qualification as an independent variable and categorised it into: up to class VIII, class IX - X, class XI - XII, and above class XII.

7 **Mother's Educational Qualification of the participant:** The researcher identified the mother's educational qualification as an independent variable and categorised it into: up to class VIII, classes IX-X, classes XI-XII, and above class XII.

4.4.2. Measured Variables

Measured variables are factors represented by quantitative values, such as physical attributes like weight and height. In social sciences such as Psychology and Education, psychological qualities are assessed using standardised psychological instruments. For instance, problem solving, creativity, efficacy, spirituality, and wellbeing. Researchers occasionally refer to these quantified variables as dependent or outcome variables. They classify them based on the role these variables play in an investigation. This study examined Creative Problem-Solving Ability (CPSA) and Educational Wellbeing (EW). Additionally, it examined the mediating roles of Self-efficacy (SE) and Spiritual Practices (SP), along with their respective dimensions, as measured variables.

Creative Problem-Solving Ability (CPSA): In the present study, the researcher considered CPSA both as a dependent variable (for mean-difference and regression analyses) and as an independent variable (for regression and mediating-effect analyses). To assess this variable, the researcher used a seven-item scale that measures thinking skills, including creative, critical, and integrative thinking, convergent and divergent thinking, and the ability to think and act creatively.

Educational Wellbeing (EW): In this study, EW was the dependent variable, measured by academic satisfaction, engagement, resilience, confidence, aspiration, mental health, emotional health, relationships, etc.

Self-efficacy (SE): SE was used as a dependent (Mean difference with demographic variables), Independent (Regression), and moderating (measuring mediating effects) variable in the study. The dimensions under these variables covered Self-Confidence, Efficacy Expectations, Positive Attitude, and Outcome Expectations.

Spiritual Practices (SP): SP used as dependent (Mean difference with demographic variables), independent (Regression), and moderating (measuring mediating effects) variables in the study. In this variable, the subscales were measured as Humanity, Gratitude, Existential, Formal Religious, and Spiritual (Mind Body).

4.5. Methods of Data Collection

4.5.1. Tools for Data Collection

The researcher employed six instruments to collect essential data from the chosen participants: a consent letter, a demographic profile sheet (encompassing socio-demographic and educational factors), and four tools aimed at evaluating Creative Problem-Solving Ability (CPSA), Educational Wellbeing (EW), along with the mediating influences of Self-Efficacy (SE) and Spiritual Practices (SP). The researcher instructed the subjects to answer each item in the instruments. A comprehensive description of each instrument is presented below:

4.5.1.(a). Informed Consent:

The investigator provided a consent letter to inform participants and the Head of the Schools about the research title, the researcher and supervisor, research purposes, research background, descriptions of tools, target participants, brief instructions about the tools, the confidentiality of responses, and to request voluntary participation, along with providing relevant data for the study.

4.5.1.(b). Demographic profile sheet:

The researcher, along with his guide, used the demographic profile sheet to gather and record participants' demographic information, including socio-demographic and educational factors, which consists of 7 items. The items are as follows: 1. Gender of the participant (Boys and Girls); 2. Family Type of the participant (Joint Family and Nuclear Family); 3. Number of Siblings of the participant (Single Child, having one sibling, two siblings, or three or more siblings); 4. Participant's Stream of Education (Arts and Science); 5. Study Hours of the participant (up to 2 hours, 3 to 5 hours, 6 to 8 hours, and 9 hours and above); 6. Father's Educational Qualification of the participant (up to class VIII, classes IX - X, classes XI - XII, and above class XII); and 7. Mother's Educational Qualification of the participant (up to class VIII, classes IX - X, classes XI - XII, and above class XII).

4.5.1.(c). Creative Problem-Solving Test

The Psssi-Usha Test of Creative Problem-Solving (PUTCPS-PK) is a standardised assessment tool developed by B. K. Passi and Dr Usha Kumar (2015) to measure creative problem-solving (CPS) ability in both adults and school-aged children. The National Psychological Corporation, Agra, UP, India, published it. It evaluated the development of thinking skills, including creative, critical, and integrative thinking. We needed such items in the test, where students had to pay close attention to aspects of thinking such as planning, decision-making, innovation, and problem-solving. Various steps in the construction of the CPS are presented under the captions: pooling of items for the CPS, item analysis, and scoring. The scale consisted of 7 items. Participants had to solve the problem by drawing a picture and describing the solution process. It is a standardised assessment tool developed by Prof. In the scale, participants drew and indicated the position for each problem (item). All seven items were translated into Bengali with my guidance, that of three language experts, and input from eight subject experts.

Technical Information about the Scale

Table 4.5. The Reliability and Validity Coefficients for the Creative Problem-Solving Test

Scale	**Reliability Coefficients**	**Validity**
The original version by Passi and Usha (2015)	0.85 (Test-retest method)	0.56 (Concurrent validity)
Bengali Translated by Ghorai and Mohakud (2025)	0.89 (Cronbach's Alpha)	0.785 (Content Validity)

Reliability: The scale's reliability, assessed via the test-retest method, was 0.85 for the original version, while during the pilot study, Cronbach's Alpha indicated a reliability of 0.89.

Validity: The concurrent validity of the PUTCPS was demonstrated by correlating its scores with those from other creativity tests, including the Passi Test of Creativity (PTC) and the Torrance Tests of Creative Thinking (TTCT). The validity score (concurrent validity method) of the scale was 0.56 for the original version. The content validity CVI score during the pilot study was 0.785.

Scoring System

The scale consists of seven items, each worth fifteen points, distributed across five criteria. Participants receive one number for each point earned. The minimum score is 0, and the maximum is 105. Table 4.6. shows the total points for each scale item by factor.

Table 4.6. Factors-wise Total Points of Each Item

Factor 1 Nature		**Factor 2 Objects**		**Factor 3 Lines**		**Factor 4 Fantasy**		**Factor 5 Coverage**	
1	Animate	4	Utility	6	Straight	11	Fancy	13	Full
				7	Curved				
2	Inanimate	5	Ornamental	8	Broken	12	Symbolic	14	Empty
				9	Soft				
3	Atmosphere			10	Strong			15	Constricted

Table 4.7. Levels of Creative Problem-Solving Ability

Sl No.	**Range of Scores**	**Range of z-Scores**	**Level of CPSA**
1.	Up to 48	-2.01 and above	Extremely Low CPSA
2.	49 – 56	-2.00 to -1.26	Low CPSA
3.	57 – 65	-1.25 to -0.51	Below Average CPSA
4.	66– 76	-0.50 to + 0.50	Average CPSA
5.	77 – 84	+ 0.51 to + 1.25	Above Average CPSA
6.	85 - 92	+ 1.26 to + 2.00	High CPSA
7.	93 and above	+ 2.01 and above	Extremely High CPSA

4.5.1.(d). Educational Wellbeing Scale

The investigator, with his supervisor (2025), developed the "Educational Wellbeing Scale" to measure educational wellbeing. This scale aims to assess satisfaction, engagement, enjoyment, mental and emotional health, aspiration, resilience, and confidence. The Educational Wellbeing Scale for adolescent school students is a tool designed to assess how learners experience and perceive their overall wellbeing in relation to education. By capturing both psychological and contextual aspects, the scale offers insights into how education affects students' satisfaction, confidence, emotional and mental health, aspiration, and academic success. Using this measure helps researchers and educators identify strengths and challenges in the learning experience, supporting

interventions that foster healthier, more supportive educational environments for adolescents. It uses a five-point Likert scale, comprising 28 items: four negative items (items 25-28) and 24 positive items (items 1-24). Completing the scale usually takes about 15 to 20 minutes. The scoring process is provided below.

Technical Information about the Scale

The present scale was developed by the researcher in collaboration with his supervisor; the details of the scale's standardisation process are given in Table 4.8.

Table 4.8. Details of the Scale Standardisation

<table>
<tr><th>Stage</th><th colspan="5">Description</th></tr>
<tr><td>Conceptualisation and Construct Definition</td><td colspan="5">Define the construct(s) to be measured based on theory and literature.</td></tr>
<tr><td>Planning and Item development</td><td colspan="5">Based on the previous literature and theories, 203 pool items were initially developed.</td></tr>
<tr><td>Review and scanning</td><td colspan="5">The researcher, with his guide, initially checked the items and selected 165 items.</td></tr>
<tr><td>Preliminary Expert Review</td><td colspan="5">The researcher sent the item to three language experts to check it, then to three subject experts to select it. After review, 120 items were selected.</td></tr>
<tr><td>Second Expert Review</td><td colspan="5">The researcher sent questionnaires to eight subject experts, and 51 items were selected based on their opinions.</td></tr>
<tr><td>Primary Try-out</td><td colspan="5">For the primary try-out with content experts, the researcher conducted a small survey of 300 grade 10 and 11 students in Paschim Medinipur, West Bengal, India.
Based on Factor analysis (EFA) researcher selected 42 items.</td></tr>
<tr><td rowspan="3">Second Try-out</td><td colspan="5">Second try out was conducted on 700 students (11th grade) of Paschim Medinipur in West Bengal, India.
Based on Factor analysis (EFA) researcher selected 28 items.</td></tr>
<tr><td>Item</td><td>communalities</td><td>Rotation Loading</td><td>Mean</td><td>SD</td></tr>
<tr><td>28</td><td>0.529<</td><td>60.266</td><td>107.81</td><td>11.24</td></tr>
<tr><td rowspan="2">Check Reliability and Validity</td><td rowspan="2">28</td><td colspan="2">Reliability</td><td colspan="2">Validity</td></tr>
<tr><td colspan="2">Cronbach’s Alpha</td><td colspan="2">Content Validity</td></tr>
</table>

Table 4.9. The Reliability and Validity Coefficients for the Educational Wellbeing Scale

Scale	**Reliability Coefficients**	**Validity**
	Cronbach's Alpha	
Educational Wellbeing Scale (Standardisation)	0.809	0.82 (Content Validity)
Educational Wellbeing Scale (Pilot Study) (N-280)	0.855	0.222 (Construct Validity)

Reliability: The researcher conducted a pilot study with 280 adolescents to assess reliability. The value of Cronbach's alpha (0.855).

Validity: Convergent validity (Construct Validity) of the instrument was assessed using Pearson's correlation coefficient. The Pearson correlation coefficient obtained for each item with the total score was compared to the critical value based on degrees of freedom (df), and the correlation had to be significant at the 0.05 level. With 280 data points, the Pearson correlation coefficient (r) is compared to the critical value (0.174). Here, the r value must be at least 0.174 (Guilford, J. P., and Fruchter, B. (1973); and Santoso, S. (2014)). In this study, the correlation coefficient is 0.222 or higher, indicating that the scale is valid.

Scoring System

	Strongly agree	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
Positive Item	5	4	3	2	1
Negative Item	1	2	3	4	5

Table 4.10. Level of Educational Wellbeing According to NPC Norms

Sl. No	**Score Range**	**Z scores**	**Level of EW**
1	Upto 87	-3σ to -1.8σ	Very Low EW
2	88 to 101	-1.8σ to -0.6σ	Low EW
3	102 to 115	-0.6σ to +0.6σ	Average EW
4	116 to 128	+0.6σ to +1.8σ	High EW
5	129 and above	+1.8σ to +3σ	Very High EW

4.5.1.(e). Self-Efficacy Scale

To assess self-efficacy, the researcher utilized the Self-Efficacy Scale. This five-point Likert scale was created by Dr. Arun Kumar Singh and Dr. Shruti Narain (2014) and published by the National Psychological Corporation in Agra, India. It was culturally adapted into Bengali by Ghorai and Mohakud (2020). The scale consists of 20 items, with 16 positive and 4 negative statements. It measures four key dimensions: Self-Confidence, Efficacy Expectation, Positive Attitude, and Outcome Expectation.

Technical Information about the Scale

The researcher used this scale to measure self-efficacy. The validity and reliability coefficients for the original scale were 0.74 and 0.92, respectively. Previously, the investigator used this scale for his M.Phil. research and obtained a high reliability coefficient. To ensure the accuracy of the present study, the researcher also conducted a pilot survey. The reliability and validity scores are shown in Table 4.11.

Table 4.11. The Reliability and Validity Coefficients for the Self-Efficacy Scale

Studies	Reliability	Validity
The original version by Singh and Narain (2014)	0.92	0.74
Bengali Translated by Ghorai and Mohakud (2020)	0.759	0.639
Pilot (Present study) (2025)	0.728	0.262(Construct Validity)

Reliability: The researcher conducted a pilot study with 280 adolescents to assess reliability, yielding a Cronbach's alpha of 0.728.

Validity: The instrument's convergent validity (construct validity) was evaluated through Pearson's correlation coefficient. The Pearson correlation coefficient for each item with the total score was compared to the critical value based on degrees of freedom, and the correlation must be significant at the 0.05 level. With 280 data points, the Pearson correlation coefficient (r) is compared with the table value of 0.174. Here, the r value must be at least 0.174 (Guilford & Fruchter, 1973; Santoso, 2014). In this study, the correlation coefficient is 0.262 or higher, indicating that the scale is valid.

Scoring System

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Positive Item	5	4	3	2	1
Negative Item	1	2	3	4	5

Table 4.12. Level of Self-Efficacy According to NPC Norms

Sl. No.	Score Range	z-Scores Range	Level of Self-Efficacy
1	Up to 62	-3σ to -1.8σ	Very Low EW
2	63 - 72	-1.8σ to -0.6σ	Low EW
3	73 - 83	-0.6σ to +0.6σ	Average EW
4	84 – 93	+0.6σ to +1.8σ	High EW
5	94 and above	+1.8σ to +3σ	Very High EW

4.5.1.(f). Spiritual Practices Scale

The Spiritual Practices Scale is a standardised instrument developed by Prof. Dr. med. Arndt Büssing et al. (2005) in German. This scale was used to measure the frequency and diversity of individuals' engagement in religious, spiritual, existential, and philosophical practices. Unlike tools that conflate beliefs and attitudes with behaviours, this scale distinctly focuses on actions and practices, thereby offering a more precise assessment of spiritual involvement. The instrument has demonstrated reliability and validity, making it particularly suitable for health care research examining spiritual engagement in relation to coping strategies, wellbeing, and overall health outcomes.

There were 24 items, grouped into five factors (Existential, Religious, Humanistic, Spiritual, and Gratitude). With the permission of the correspondence author (Prof. Dr. med. Arndt Büssing) via email, the investigator, with his guide, translated and adapted all twenty-four items into Bengali and followed all steps of back translation according to Prof. Arndt Sir's advice. After completing the back translation, Prof. Arndt Sir permitted the use of the scale (10/10/2024). In the present study, all these 24 items were used for data collection.

Steps for Translation and Adaptation of Spiritual Practices

To translate and adapt the Spiritual Practices Scale for Bengali culture, the researcher primarily followed the steps suggested by Sonnenblick and Rosin (1991). However, details of the procedure for instrument translation and adaptation are provided below.

1. **Instrument translation from the source language into the target language (Forward Translated):** First of all, the researcher translated the language from English to Bengali twice.

2. **Synthesis of the translated version:** The target Bengali-language researcher checks the translated version. (to understand the population and to simplify the translation)
3. **A synthesis evaluation by expert judges:** After synthesising the translated version, the researcher submits it to both the language expert and the content expert for evaluative synthesis.
4. **Instrument evaluation by the target population:** A brief survey was conducted on the target population to verify the modified instrument.
5. **Back translation:** Back-translation is recommended as an extra quality control step (Sireci et al., 2006). From our view, this process should include all semantic and idiomatic adjustments, as the instrument needs to be "ready" for final review by the original author. Back-translation involves translating the revised and synthesized versions of the instrument back into the source language, with the goal of assessing how accurately the translated version captures the original item's content.
6. **A pilot study:** This is used to justify and verify whether the instrument is ready for final data collection. In this stage, the investigator collects a small amount of data from the target population.

Technical Information about the Scale

The items on the Spiritual Practices Scale (SpREUK-P) are rated on a 4-point scale: 0 for never, 1 for seldom, 2 for often, and 3 for regularly. These scores can be converted into a 100% scale (transformed scale scores), which measures the level of participation in various spiritual or religious practices (engagement scores). A score above 50% indicates higher engagement, whereas a score below 50% reflects less frequent participation.

In the present study, the investigator collected 280 data from the Paschim Medinipur district in West Bengal. Using these data, the investigator assessed reliability and validity (see Table 4.13 for details).

Table 4.13. The Reliability and Validity Coefficients for the Spiritual Practices Scale

Studies	Reliability	Validity
Original Version of Büssing et al. (2005)	0.84 alpha	-
Pilot Study	0.813 (Cronbach's Alpha) 0.862 (split-half)	0.76 (content validity) 0.289 (Construct validity)

Reliability: Based on 280 data points, the Reliability test ensures consistent results. The results of the pilot study were compared with those of the final study to ensure consistency, using internal consistency reliability. In the present study, the reliability is 0.813 (Cronbach's Alpha) and 0.862 (split-half)

Validity: Based on the eight-expert rating, the content validity score was estimated at 0.76, and the researcher used Pearson correlation to assess convergent validity (construct validity). The obtained value of the Pearson coefficient of correlation for each item value with the total value compared with the table value based on df, and the correlation must be significant at the 0.05 level. Based on 280 data, the validity test of the Pearson correlation coefficient (r) is compared with the table value. The r value must be at least 0.174 (Guilford & Fruchter, 1973; Santoso, 2014). In the present study, the correlation coefficient was 0.289, which exceeded 0.174, indicating that the scale is valid.

Scoring System

	Never	**Seldom**	**Often**	**Regularly**
Item	0	1	2	3

Table 4.14. Level of Spiritual Practices according to NPC

Sl. No.	Range of Scores	Range of z-Scores	Level of Spiritual Practices
1.	26 and below	-3σ to -1.8σ	Very Low Spiritual Practices
2.	27 to 39	-1.8σ to -0.6σ	Low Spiritual Practices
3.	40 to 52	-0.6σ to +0.6σ	Average Spiritual Practices
4.	53 to 65	+0.6σ to +1.8σ	High Spiritual Practices
5.	66 and above	+1.8σ to +3σ	Very High Spiritual Practices

4.5.2. Data Collection Procedure

After obtaining approval from the Research Advisory Committee (RAC), the researcher began the data collection by securing a bona fide letter from the research supervisor. Data were gathered through personal visits to the selected schools, where hard copies of the research instruments were administered. Prior permission and consent were obtained from the principals and authorised teachers of the respective schools.

With their approval, the researcher, accompanied by the concerned school teacher, visited the assembly hall or classrooms to build rapport with the students. The researcher introduced himself, clearly explained the purpose of the study, and assured the

participants of confidentiality and voluntary participation. Afterwards, participants were randomly selected and provided informed consent.

The selected participants were then given the research tools, specifically the Demographic Profile Sheet, Creative Problem-Solving Test, Self-Efficacy Scale, Spiritual Practices Scale, and Educational Wellbeing Scale. Brief instructions about the purpose and how to complete each instrument were provided, and students were told to respond to all items carefully and honestly. On average, participants took about 90–100 minutes to complete all the instruments. The researcher personally supervised the entire data collection to ensure clarity, cooperation, and completeness of responses.

4.6. Data Storage and Protection

4.6.1. Data Examination

The investigator initially reviewed all survey responses to ensure completeness. Only responses with completed consent forms and survey scales were included, where missing information did not lead to exclusion. After data cleaning and processing, all valid responses were compiled into a single MS Excel file and securely stored on the researcher's own computer, with access restricted solely to the researcher.

4.6.2. Data Tabulation

The data were methodically organised sequentially for subsequent analysis and interpretation to derive conclusions regarding the aims of the current study. The raw data collected from 720 teenagers attending higher secondary schools across twelve institutions in the Purba Medinipur and Paschim Medinipur districts were systematically organised in an Excel spreadsheet.

4.7. Statistical Analysis

During the statistical analysis, the researcher accessed the securely stored Excel file from the computer. The data were then imported into SPSS-21. All statistical analyses were performed using this program, with assistance and oversight from the study supervisor.

4.7.1. Normality of Data and Outliers

The researcher performed Skewness and Kurtosis analyses using SPSS 21 to evaluate data normality. As noted by Byrne (2010) and Doane and Seward (2011), data are considered normally distributed if Skewness falls between -2 and +2 and kurtosis between

-7 and +7. To identify outliers in SPSS 21, the interquartile range was calculated from Tukey's hinge output. Boxplots were generated to spot data points beyond the +1.5 and -1.5 interquartile ranges (above the third quartile and below the first quartile, respectively), as well as extreme outliers outside the +3 and -3 interquartile ranges. Any outliers removed were documented in the final analysis and findings report.

4.7.2. Descriptive Data Analyses

Detailed descriptions of the socio-demographic characteristics of school-going adolescents- including gender, family type, and number of siblings- and educational factors such as educational stream, study hours, and parents' educational qualifications were provided using basic descriptive statistics. Additionally, the distribution of CPSA, EW, SE, and SP scores among these adolescents is analysed and presented in Chapter V.

4.7.3 Parametric Statistics

Parametric statistics is a specific subset of inferential statistics used for hypothesis testing and drawing conclusions. It encompasses both descriptive and inferential analyses. To assess the hypotheses, the researcher applied various parametric methods, including Pearson's correlation, t-tests, One-way ANOVA, simple and multiple regression, and mediating (path) analysis, using the Hayes Process Macro in SPSS-21. A Pearson correlation was performed to explore the relationships among CPSA, EW, SE, and SP in school-going adolescents. Additionally, t-tests and One-way ANOVA were employed to identify significant mean differences in the dependent variables based on demographic factors. Regression analyses, both simple and multiple, examined the influence of SE, SP, and CPSA on EW. The Hayes Process Macro was used for regression analysis to assess the mediating role of SE and SP in the relationship between CPSA and EW among school-going adolescents.

4.8. Presumptions, Constraints, and Ethical Considerations

This section covers the study's assumptions, limitations, and ethical considerations. It also addresses concerns such as possible input errors, data accuracy, and other relevant issues that might impact future research. The assumptions related to correlation analysis and normal distribution are discussed separately in the sections on correlation and associated statistical techniques.

4.8.1. Presumptions

The assumption was that participants answered the survey honestly and accurately, identifying themselves as school-going adolescents. It was also believed that this honesty would help protect participants' information, such as demographic data and survey responses.

4.8.2. Limitations

The study relied on participants' self-reported data, with the researcher trusting the accuracy and objectivity of their responses. Additionally, participants were only contacted for research-related purposes and solely within the duration of the study.

4.8.3. Ethical Considerations

Strict adherence to ethical practices was maintained throughout the survey research. The study aimed to investigate correlations among variables, therefore refraining from making causal claims. Data collection was initiated upon receipt of written consent from the Institutional Review Board (IRB). Before participation, all prospective respondents received explicit information about the study's goals and scope, ensuring that involvement was voluntary and free from coercion. Informed permission forms were distributed and executed in accordance with the ethical standards of Jadavpur University, the Research Advisory Committee (RAC), and the broader scientific community. To protect participants' rights, confidentiality and anonymity were rigorously maintained, and no individually identifiable information was collected. During the study, meticulous attention was paid to ensuring accurate data entry, thereby reducing input errors and strengthening the reliability and relevance of the findings.

4.9. Research design

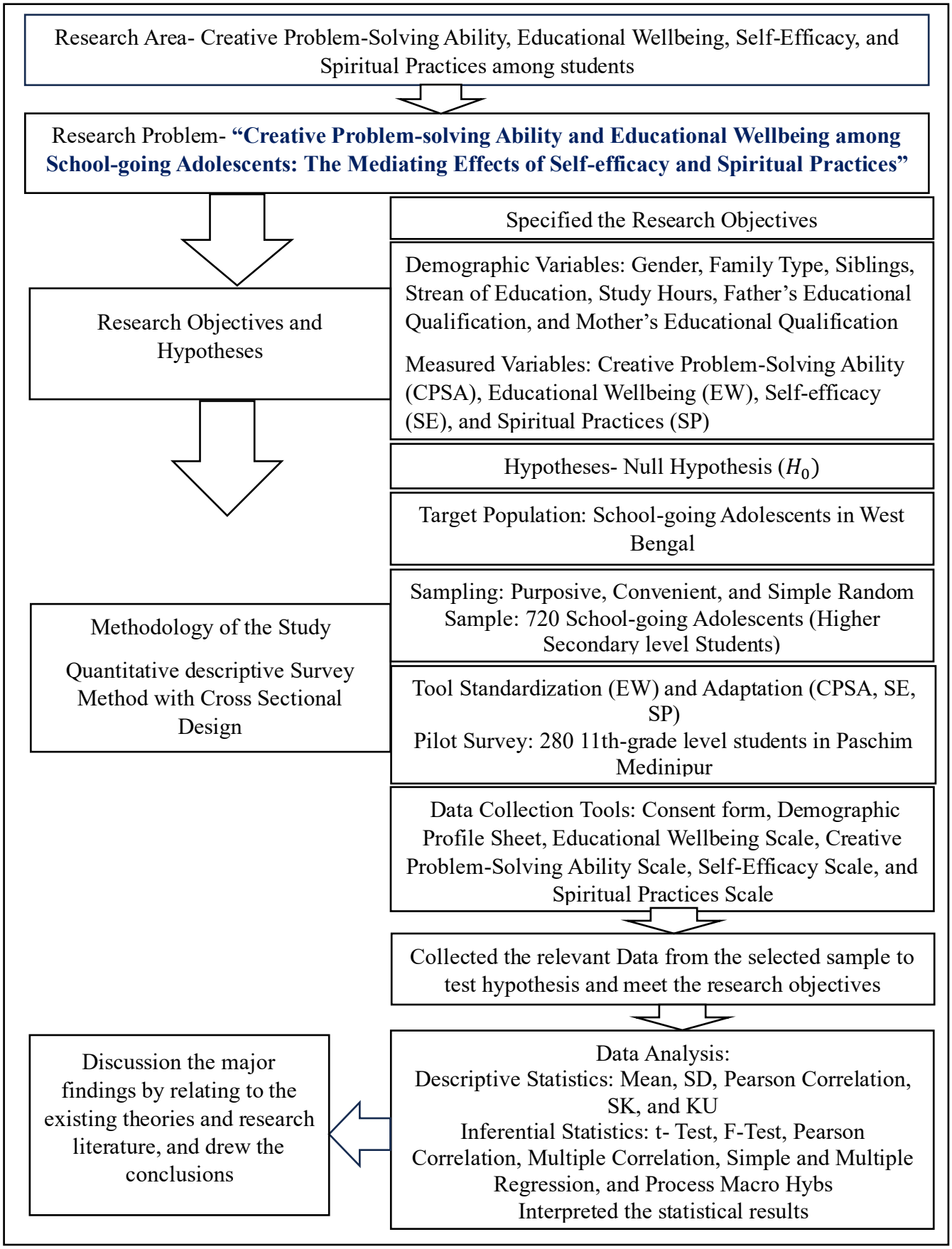


Fig. 4.2. Research Design

4.10. Analysis Designs

4.10.1. Factorial analysis design relating to objective- 3

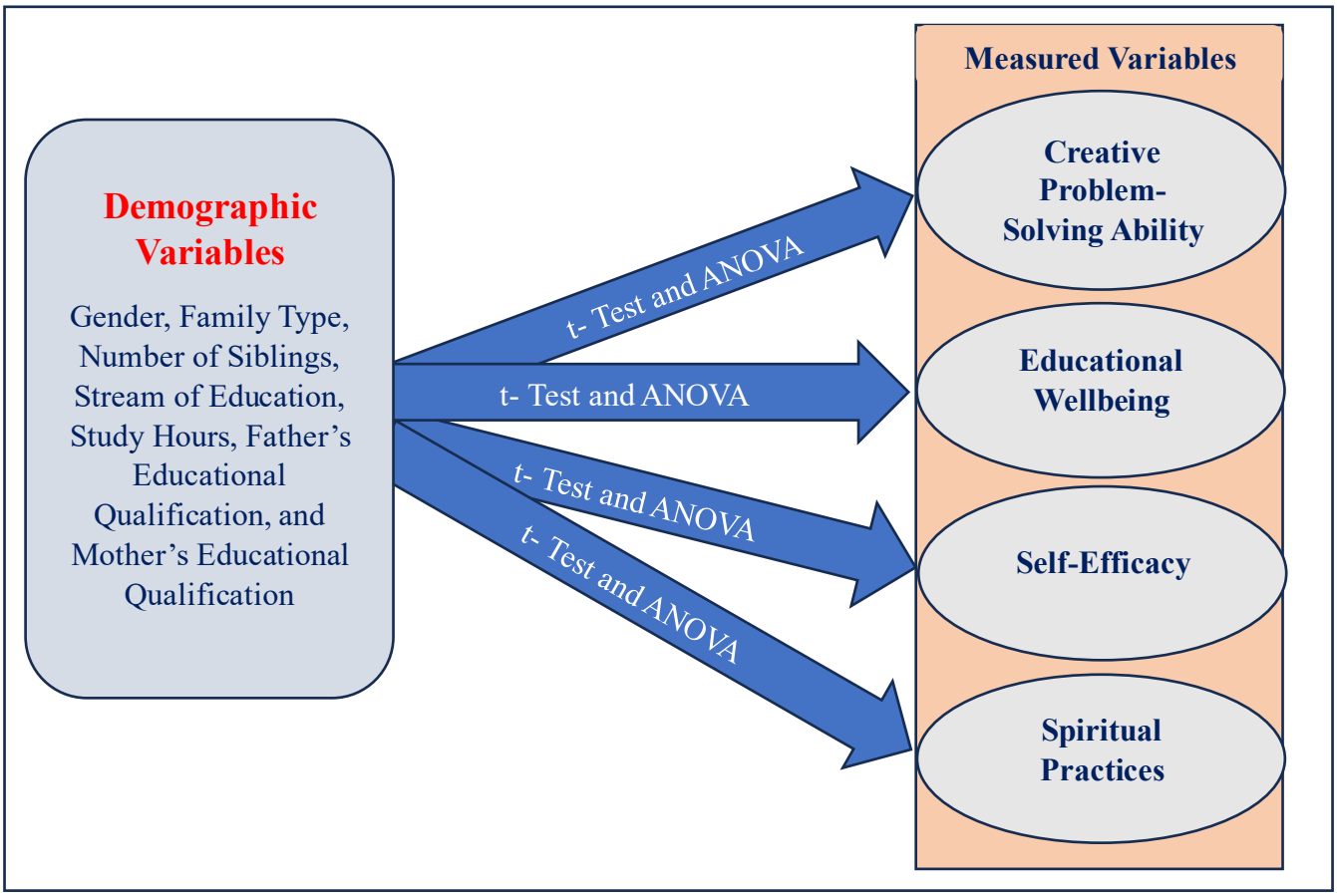


Fig. 4.3. Factorial Analysis Design Relating to Demographic Variables Varies on CPSA, EW, SE, and SP

4.10.2. Factorial analysis design relating to objective- 4

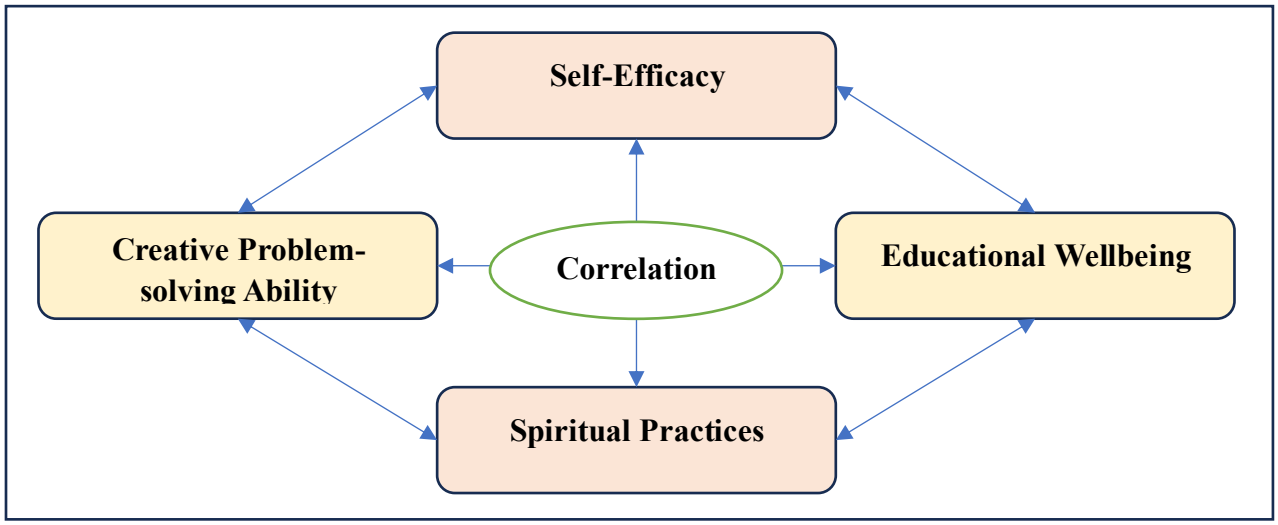


Fig 4.4. Factorial Analysis Design Relating to Linear Correlation among CPSA, EW, SE, and SP

4.10.3. Factorial analysis design relating to objective- 5,6,7

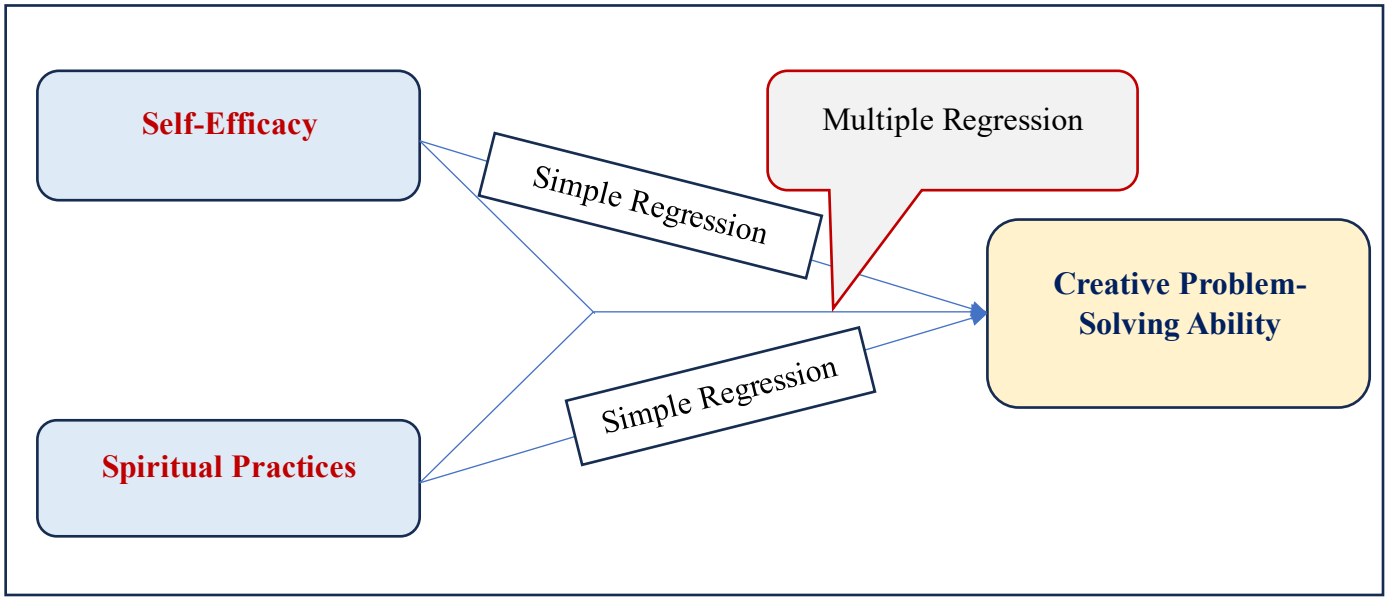


Fig. 4.5. Factorial Analysis Design Relating to Regression of SE and SP on CPSA

4.10.4. Factorial analysis design relating to objective- 8,9,10

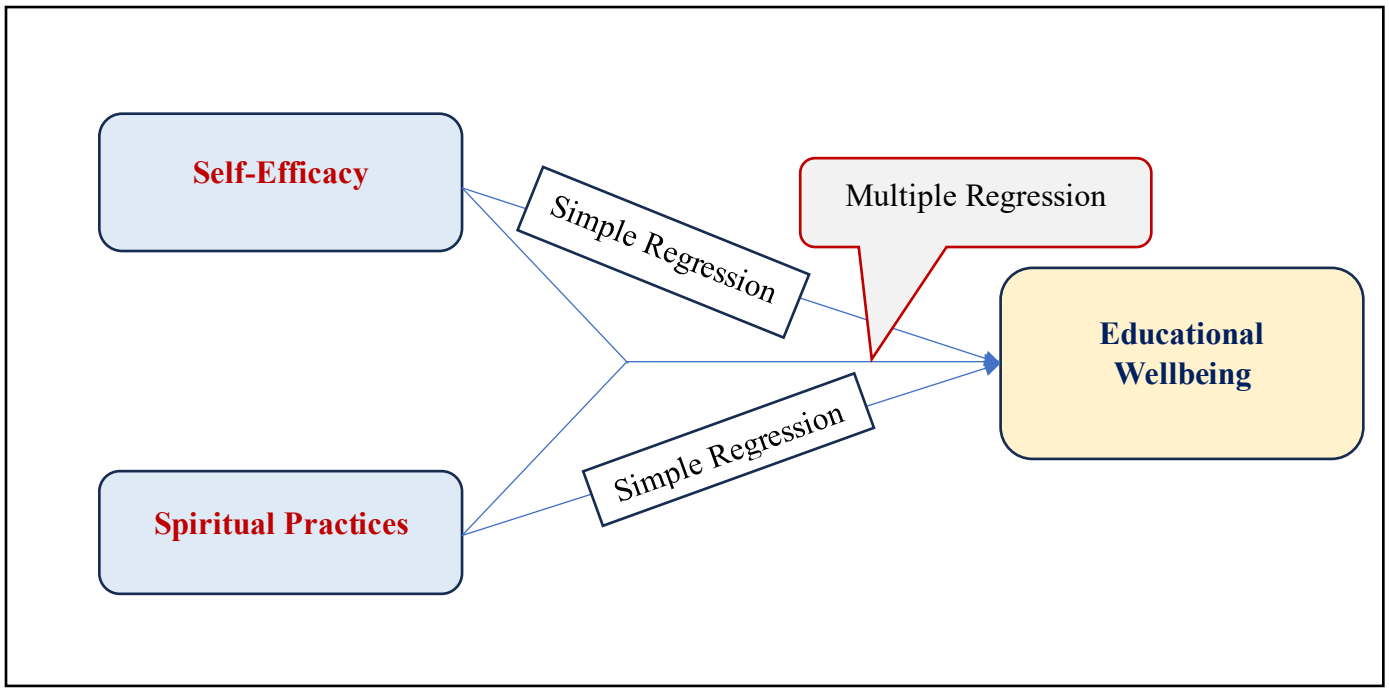


Fig. 4.6. Factorial Analysis Design Relating to Regression of SE and SP on EW

4.10.5. Factorial analysis design relating to objective- 11

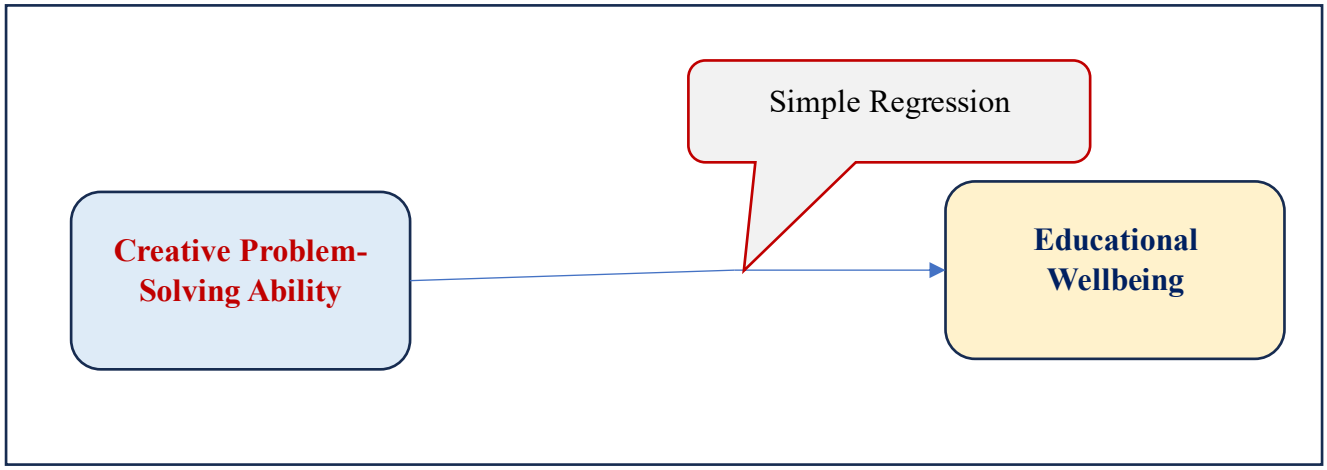


Fig. 4.7. Factorial Analysis Design Relating to Regression of CPSA on EW

4.10.6. Factorial analysis design relating to objective- 12

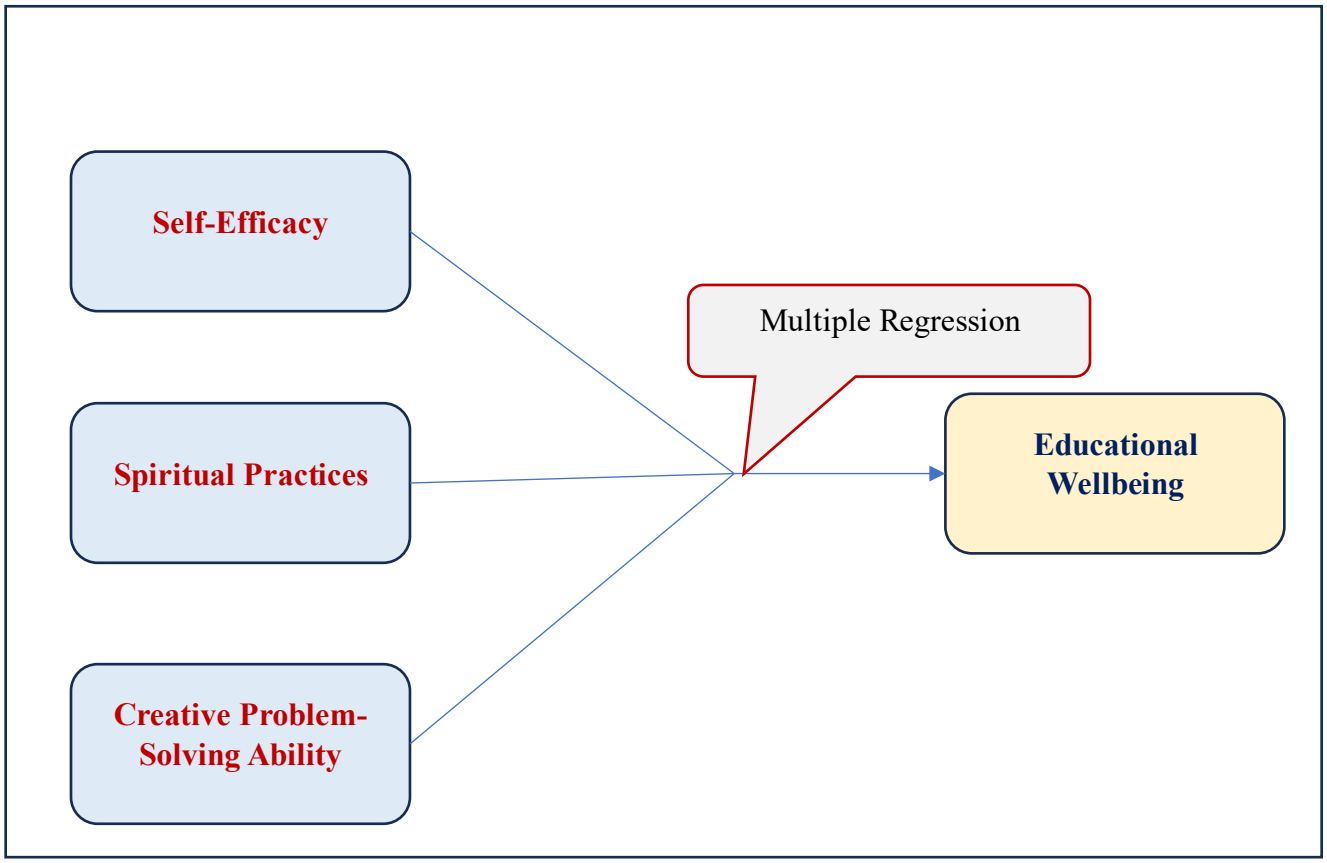


Fig. 4.8. Factorial Analysis Design Relating to Regression of CPSA, SE, and SP on EW

4.10.7. Factorial analysis design relating to objective- 13,14,15

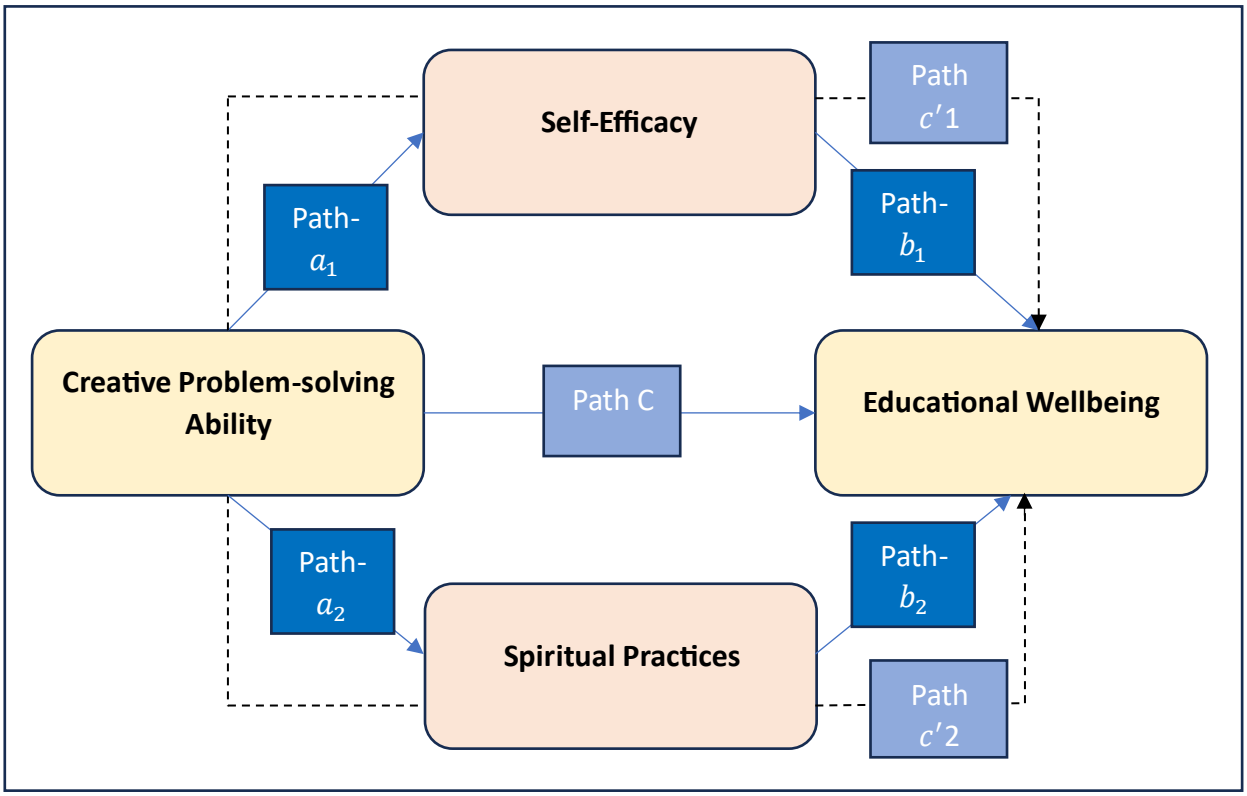


Fig. 4.9. Factorial Analysis Design Concerning the Mediating Effects of SE and SP in the Relationship between CPSA and EW

CHAPTER- V

ANALYSIS AND INTERPRETATION OF THE DATA

CHAPTER- V

ANALYSIS AND INTERPRETATION OF THE DATA

5.0. Introduction

This chapter offers a systematic analysis and interpretation of the data collected for the study in line with the stated objectives and hypotheses. Appropriate statistical and analytical methods have been used to organise, analyse, and interpret the data effectively. The findings are presented in a logical order, using tables and figures where necessary. The interpretation of results relates to the research objectives, hypotheses, and the study's conceptual framework. The chapter aims to identify emerging patterns and relationships among variables, thereby providing empirical support for the study's conclusions.

5.1. Analysis and Interpretations

5.1.1. Test of Data Normality

Table 5.1. Overall Data Normality Test for Creative Problem-Solving Ability (CPSA), Educational Wellbeing (EW), Self-Efficacy (SE), and Spiritual Practices (SP)

Measured Variables		Statistic	Std. Error
CPSA	Skewness	-.124	.091
	Kurtosis	-.620	.182
EW	Skewness	-.172	.091
	Kurtosis	-.370	.182
SE	Skewness	-.162	.091
	Kurtosis	-.399	.182
SP	Skewness	-.008	.091
	Kurtosis	-.551	.182

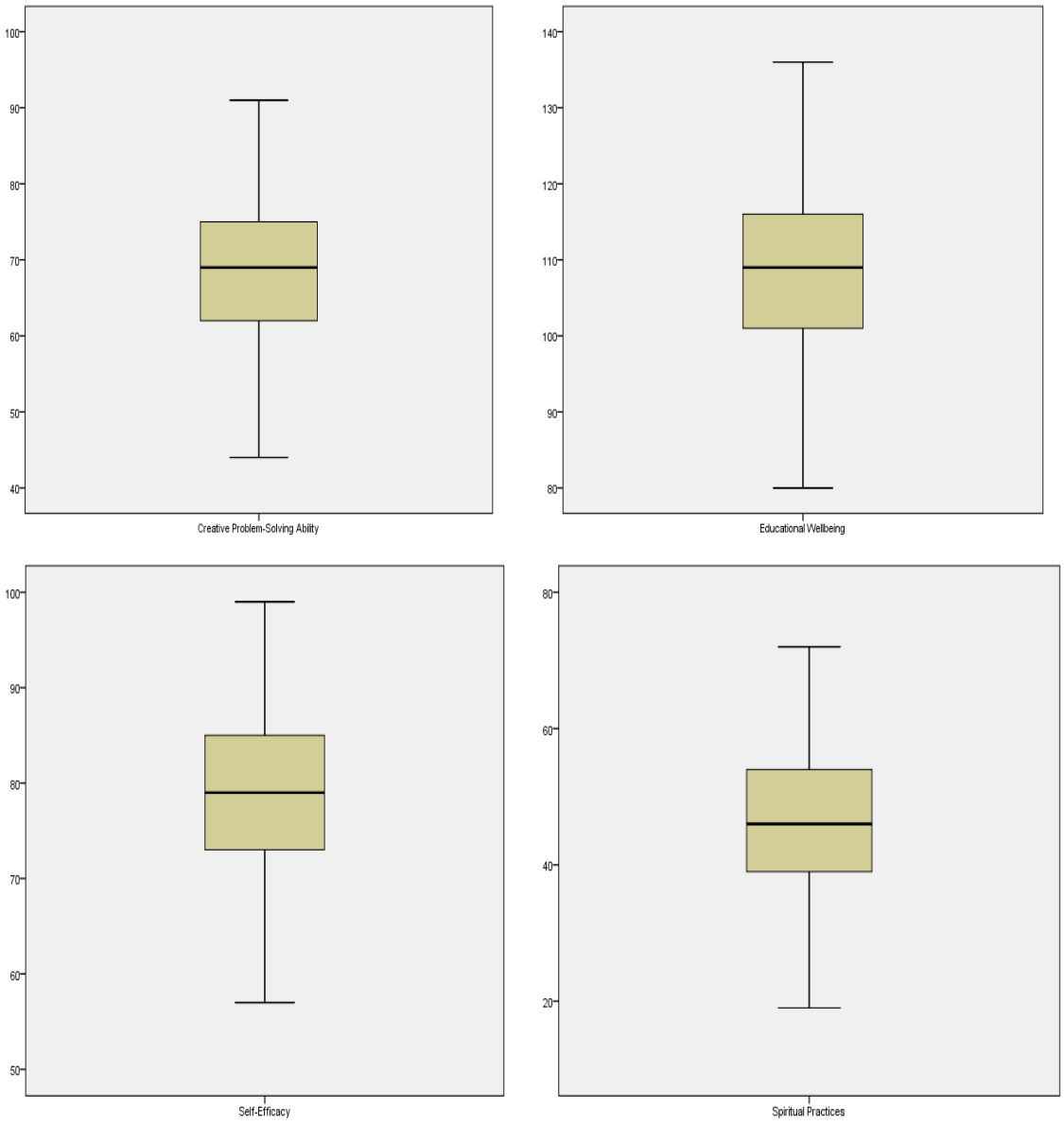


Fig. 5.1. Data Normality Test of CPSA, EW, SE, and SP

Interpretation

For the data normality test, when the sample size was extensive (>300), the Skewness and Kurtosis tests could be applied according to D'Agostino, R. B., and Stephens, M. A. (1986) and Jarque, C. M., and Bera, A. K. (1987). This occurred because the Central Limit Theorem states that the sampling distribution becomes approximately normal when the sample size exceeds 30, and the researcher used a sample of 720. According to Bryne (2010) and Doane, D. P., and Seward, L.E. (2011), the data distribution is considered normal if Skewness is between -2 and +2 and Kurtosis is between -7 and +7. All skewness values fall between –0.17 and –0.01, and kurtosis values range from –0.62 to –0.37. These

values remain well within acceptable limits, indicating that the distributions were very close to normal. Skewness and Kurtosis results showed that the data were near-normal.

Table 5.2. Gender-wise Data Normality Test of Creative Problem-Solving Ability, Educational Wellbeing, Self-Efficacy, and Spiritual Practices

Measured Variable	**Gender**	**Statistics**	**Statistic**	**Std. Error**
CPSA	Boys	Skewness	-.372	.129
		Kurtosis	-.541	.256
	Girls	Skewness	-.101	.129
		Kurtosis	-.600	.256
EW	Boys	Skewness	-.094	.129
		Kurtosis	-.460	.256
	Girls	Skewness	-.140	.129
		Kurtosis	-.376	.256
SE	Boys	Skewness	-.044	.129
		Kurtosis	-.488	.256
	Girls	Skewness	-.285	.129
		Kurtosis	-.254	.256
SP	Boys	Skewness	-.005	.129
		Kurtosis	-.681	.256
	Girls	Skewness	.012	.129
		Kurtosis	-.423	.256

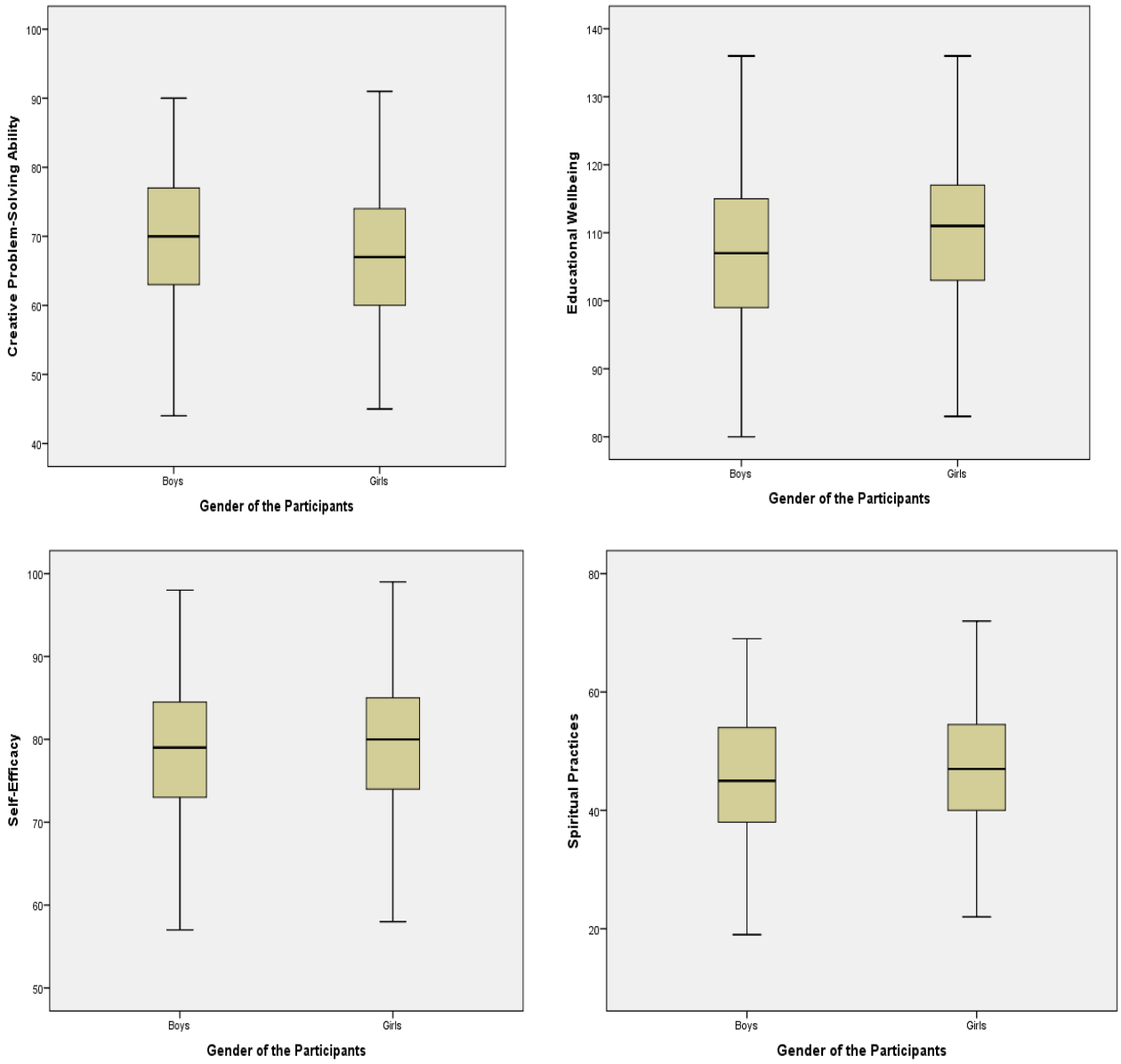


Fig. 5.2. Gender-wise Data Normality Test of CPSA, EW, SE, and SP

Interpretation

Table No 5.2. and Fig. No 5.2. showed gender wise test of data normality. The normality test results across gender groups for all four measured variables, i.e., CPSA, EW, SE, and SP, indicate that the data are approximately normally distributed for both boys and girls. Skewness values for all variables fall well within the acceptable range of −1 to +1, indicating only slight negative or near-zero skewness, suggesting fairly symmetrical distributions. Likewise, kurtosis values remain within the acceptable range of −1 to +1, suggesting no problematic peakedness or flatness in the distributions for either gender. Overall, these results showed that the assumption of normality is reasonably met for boys

and girls across all variables, supporting the appropriateness of parametric statistical analyses.

Table 5.3. Family Type-wise Data Normality Test of Creative Problem-Solving Ability, Educational Wellbeing, Self-Efficacy, and Spiritual Practices

Measured Variable	Family Type	Statistics	Statistic	Std. Error
CPSA	Joint Family	Skewness	-.283	.165
		Kurtosis	-.842	.328
	Nuclear Family	Skewness	-.195	.109
		Kurtosis	-.514	.218
EW	Joint Family	Skewness	-.212	.165
		Kurtosis	-.534	.328
	Nuclear Family	Skewness	-.153	.109
		Kurtosis	-.285	.218
SE	Joint Family	Skewness	-.079	.165
		Kurtosis	-.274	.328
	Nuclear Family	Skewness	-.217	.109
		Kurtosis	-.421	.218
SP	Joint Family	Skewness	-.214	.165
		Kurtosis	-.755	.328
	Nuclear Family	Skewness	.113	.109
		Kurtosis	-.446	.218

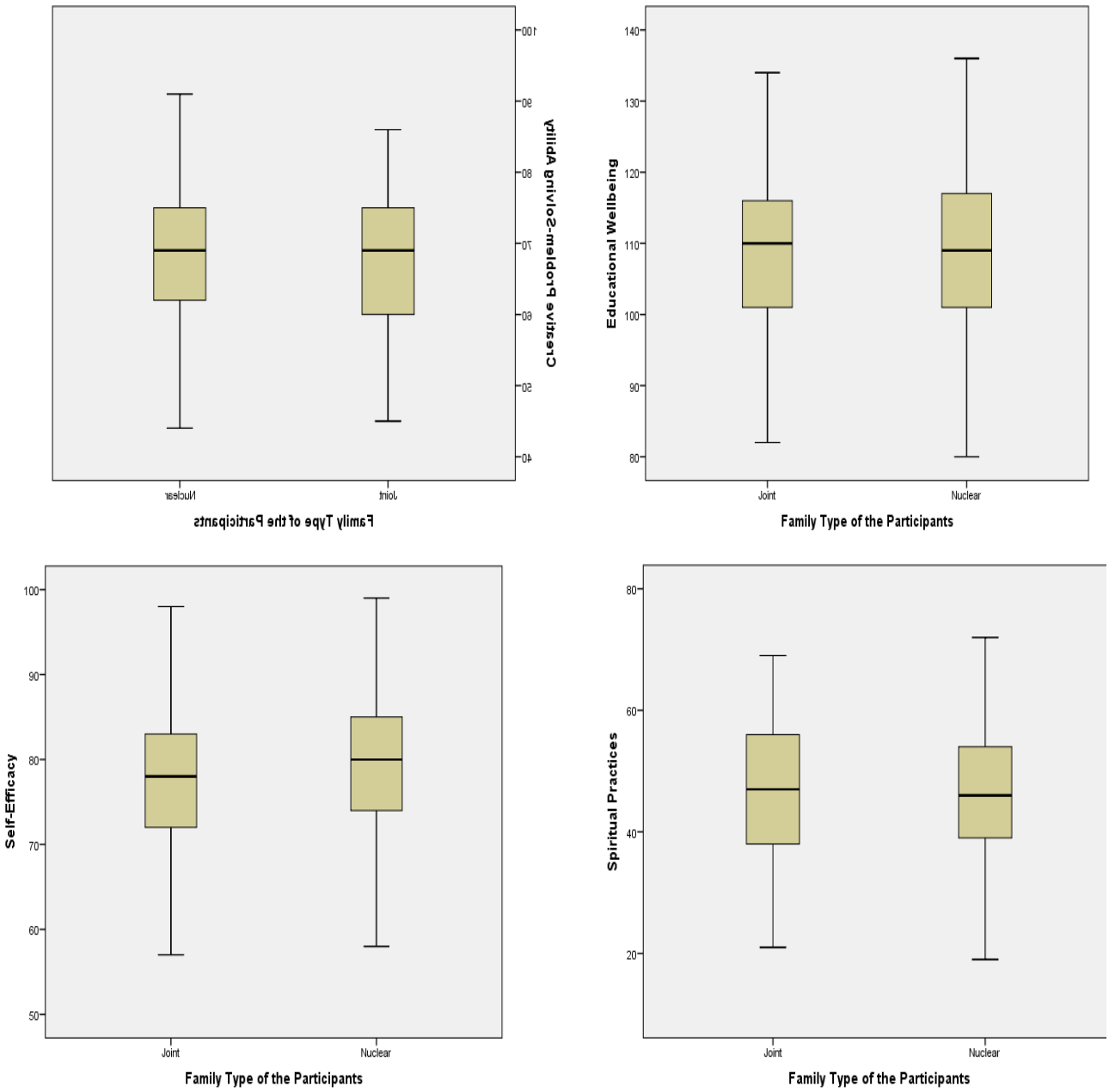


Fig. 5.3. Family Type-wise Data Normality Test of CPSA, EW, SE, and SP

Interpretation

The normality test results across family types indicated that the distributions of CPSA, EW, SE, and SP are approximately normal for participants from both joint and nuclear families. All skewness values fall within the acceptable ±1 range, showing only slightly negative or near-zero skewness in most cases, which suggests that the data were fairly symmetrical across variables and family types. Similarly, kurtosis values remain within acceptable limits, indicating no significant deviation in peakiness or flatness for either group. Overall, the results confirm that the assumption of normality was reasonably

satisfied for all measured variables in both joint and nuclear family groups, supporting the use of parametric statistical analyses.

Table 5.4. Number of Siblings-wise Data Normality Test of Creative Problem-Solving Ability, Educational Wellbeing, Self-Efficacy, and Spiritual Practices

Measured Variable	Number of siblings	Statistics	Statistic	Std. Error
CPSA	Single child	Skewness	-.364	.226
		Kurtosis	-.735	.449
	Having one sibling	Skewness	-.277	.117
		Kurtosis	-.413	.234
	Having two siblings	Skewness	-.027	.212
		Kurtosis	-.848	.420
	Having three or more siblings	Skewness	.093	.369
		Kurtosis	-1.091	.724
EW	Single child	Skewness	-.251	.226
		Kurtosis	-.377	.449
	Having one sibling	Skewness	-.124	.117
		Kurtosis	-.360	.234
	Having two siblings	Skewness	-.150	.212
		Kurtosis	-.597	.420
	Having three or more siblings	Skewness	-.280	.369
		Kurtosis	.309	.724
SE	Single child	Skewness	-.211	.226
		Kurtosis	-.170	.449
	Having one sibling	Skewness	-.215	.117
		Kurtosis	-.377	.234
	Having two siblings	Skewness	.026	.212
		Kurtosis	-.334	.420
	Having three or more siblings	Skewness	.057	.369
		Kurtosis	-.737	.724
	Single child	Skewness	-.069	.226
		Kurtosis	-.614	.449
	Having one sibling	Skewness	.009	.117

SP		Kurtosis	-.481	.234
	Having two siblings	Skewness	.015	.212
		Kurtosis	-.652	.420
	Having three or more siblings	Skewness	.004	.369
		Kurtosis	-.714	.724

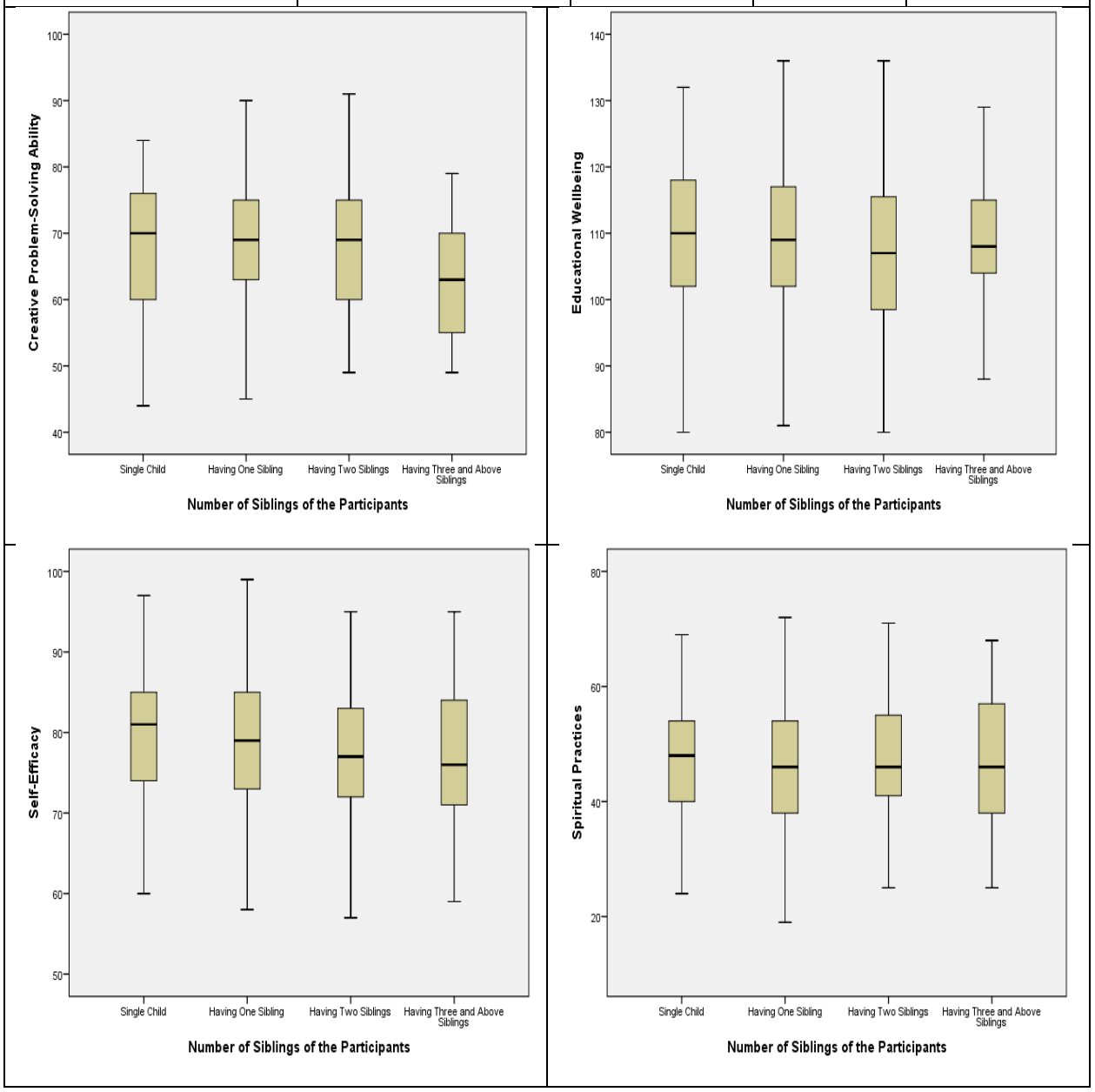


Fig. 5.4. Number of Siblings-wise Data Normality Test of CPSA, EW, SE, and SP

Interpretation

The normality test results across different sibling groups, i.e., single child, having one sibling, having two siblings, and having three or more siblings, indicate that the distributions of CPSA, EW, SE, and SP were generally normal across all categories.

Skewness values for all variables remain well within the acceptable ±1 range, showing slightly negative or near-zero skewness, suggesting fairly symmetrical distributions across groups. Likewise, kurtosis values fall within acceptable limits, with no extreme peaks or flatness observed, even in smaller subgroups such as participants with three or more siblings. Overall, the data demonstrate that the assumption of normality was reasonably satisfied for all measured variables across sibling categories, supporting the appropriateness of parametric statistical analyses.

Table 5.5. Stream of Education-wise Data Normality Test of Creative Problem-Solving Ability, Educational Wellbeing, Self-Efficacy, and Spiritual Practices

Measured Variable	Stream of Education	Statistics	Statistic	Std. Error
CPSA	Arts	Skewness	-.081	.121
		Kurtosis	-.678	.242
	Science	Skewness	-.407	.137
		Kurtosis	-.347	.273
EW	Arts	Skewness	-.152	.121
		Kurtosis	-.234	.242
	Science	Skewness	-.209	.137
		Kurtosis	-.502	.273
SE	Arts	Skewness	-.108	.121
		Kurtosis	-.420	.242
	Science	Skewness	-.207	.137
		Kurtosis	-.349	.273
SP	Arts	Skewness	-.002	.121
		Kurtosis	-.396	.242
	Science	Skewness	-.015	.137
		Kurtosis	-.717	.273

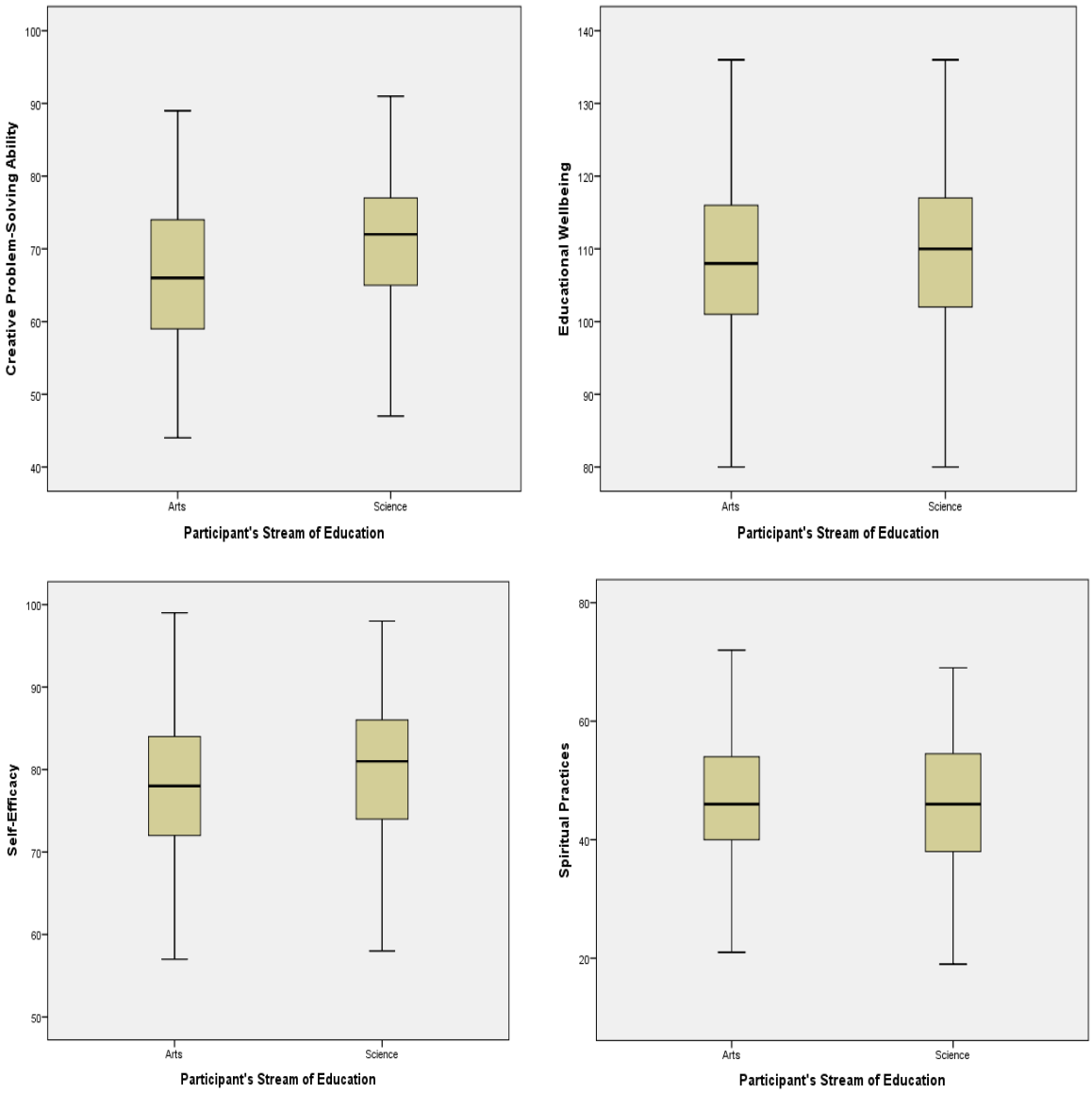


Fig. 5.5. Stream of Education-wise Data Normality Test of CPSA, EW, SE, and SP

Interpretation

Across both Arts and Science participants, the skewness and kurtosis values for CPSA, EW, SE, and SP fall well within the generally accepted normality thresholds (±1 for skewness and ±1 to ±2 for kurtosis). All skewness values were close to zero, indicating that the score distributions are largely symmetric in both streams. Similarly, the kurtosis values show only mild negative kurtosis, suggesting slightly flatter-than-normal distributions but still within acceptable limits. Overall, the results indicated that all four measured variables are approximately normally distributed for both Arts and Science students, supporting the suitability of parametric statistical analyses.

Table 5.6. Study Hours-wise Data Normality Test of Creative Problem-Solving Ability, Educational Wellbeing, Self-Efficacy, and Spiritual Practices

Measured Variable	Study Hours	Statistics	Statistic	Std. Error
CPSA	Up to 2 Hours	Skewness	-.329	.263
		Kurtosis	-.607	.520
	3 to 5 Hours	Skewness	-.151	.143
		Kurtosis	-.496	.286
	6 to 8 Hours	Skewness	-.392	.152
		Kurtosis	-.623	.302
	9 Hours and above	Skewness	.049	.255
		Kurtosis	-.785	.506
EW	Up to 2 Hours	Skewness	-.163	.263
		Kurtosis	-.811	.520
	3 to 5 Hours	Skewness	-.077	.143
		Kurtosis	-.419	.286
	6 to 8 Hours	Skewness	-.251	.152
		Kurtosis	-.189	.302
	9 Hours and above	Skewness	-.115	.255
		Kurtosis	-.294	.506
SE	Up to 2 Hours	Skewness	.274	.263
		Kurtosis	-.210	.520
	3 to 5 Hours	Skewness	-.239	.143
		Kurtosis	-.292	.286
	6 to 8 Hours	Skewness	-.227	.152
		Kurtosis	-.331	.302
	9 Hours and above	Skewness	-.110	.255
		Kurtosis	-.781	.506
SP	Up to 2 Hours	Skewness	-.065	.263
		Kurtosis	-.797	.520
	3 to 5 Hours	Skewness	.048	.143
		Kurtosis	-.616	.286

	6 to 8 Hours	Skewness	-.007	.152
		Kurtosis	-.641	.302
	9 Hours and above	Skewness	-.070	.255
		Kurtosis	-.555	.506

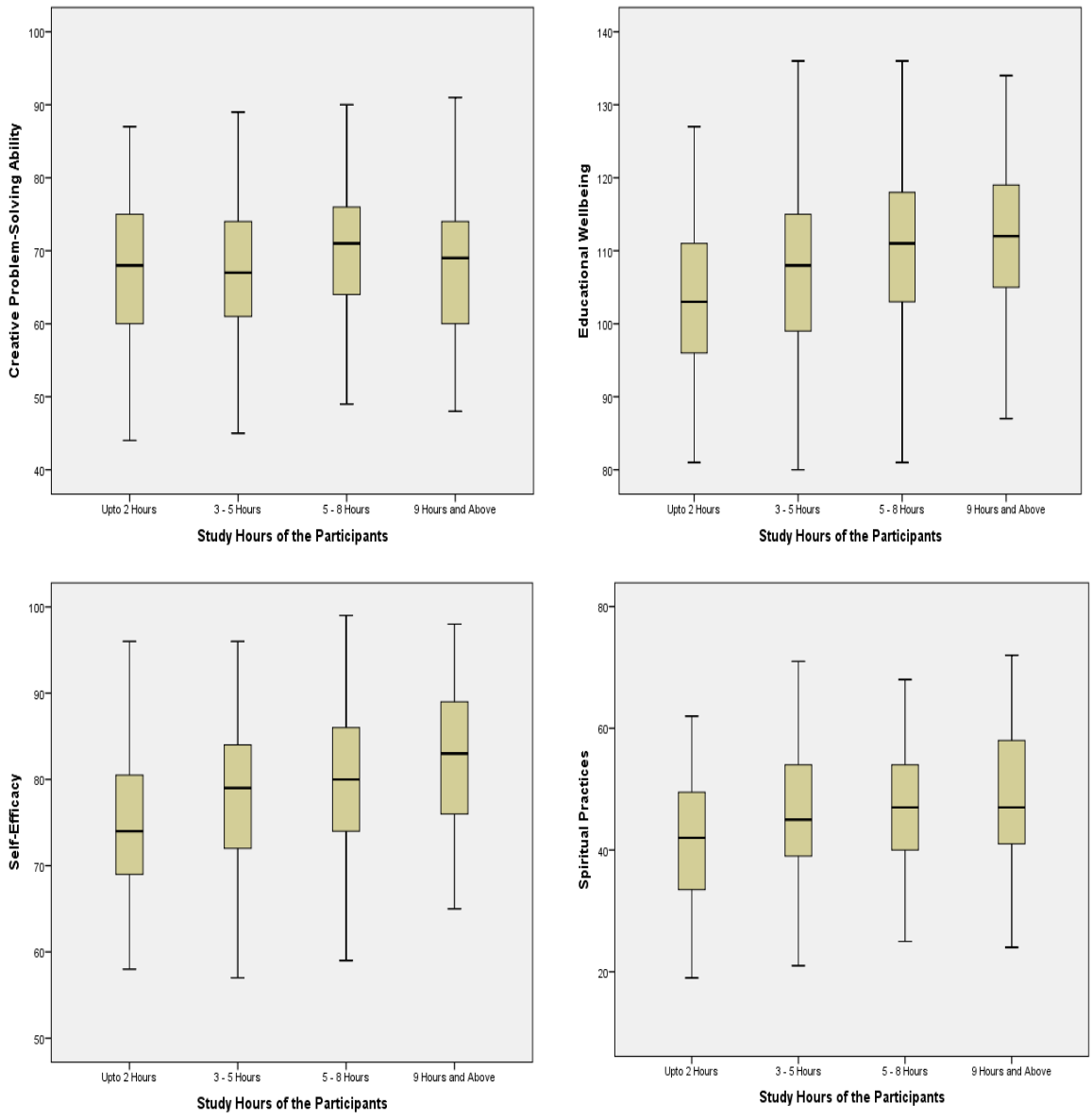


Fig. 5.6. Study Hours-wise Data Normality Test of CPSA, EW, SE, and SP

Interpretation

Across all study-hour categories, the skewness and kurtosis values for CPSA, EW, SE, and SP fall within acceptable limits for normality (skewness within ±1 and kurtosis within ±1 to ±2). The skewness values were close to zero across variables and groups, indicating largely symmetrical score distributions regardless of study hours. Similarly, the kurtosis

values showed mild negative kurtosis, suggesting slightly flatter-than-normal distributions but still within the range considered appropriate for assuming normality. Overall, the results indicated that all four psychological variables exhibit approximately normal distributions across different study-hour groups, supporting the use of parametric statistical procedures.

Table 5.7. Father's Educational Qualification-wise Data Normality Test of Creative Problem-Solving Ability, Educational Wellbeing, Self-Efficacy, and Spiritual Practices

Measured Variable	Father's Educational Qualification	Statistics	Statistic	Std. Error
CPSA	Up to Class VIII	Skewness	-.086	.159
		Kurtosis	-.466	.318
	Class IX-X	Skewness	-.178	.168
		Kurtosis	-.743	.335
	Class XI - XII	Skewness	-.300	.183
		Kurtosis	-.577	.363
	Above Class XII	Skewness	-.394	.240
		Kurtosis	-.672	.476
EW	Up to Class VIII	Skewness	-.126	.159
		Kurtosis	-.333	.318
	Class IX-X	Skewness	-.227	.168
		Kurtosis	-.562	.335
	Class XI - XII	Skewness	-.211	.183
		Kurtosis	-.166	.363
	Above Class XII	Skewness	.138	.240
		Kurtosis	-.785	.476
SE	Up to Class VIII	Skewness	-.124	.159
		Kurtosis	-.228	.318
	Class IX-X	Skewness	-.152	.168
		Kurtosis	-.637	.335
	Class XI - XII	Skewness	-.111	.183
		Kurtosis	-.365	.363
	Above Class XII	Skewness	-.374	.240

		Kurtosis	-.131	.476
SP	Up to Class VIII	Skewness	.018	.159
		Kurtosis	-.326	.318
	Class IX-X	Skewness	.097	.168
		Kurtosis	-.644	.335
	Class XI - XII	Skewness	-.173	.183
		Kurtosis	-.742	.363
	Above Class XII	Skewness	-.101	.240
		Kurtosis	-.548	.476

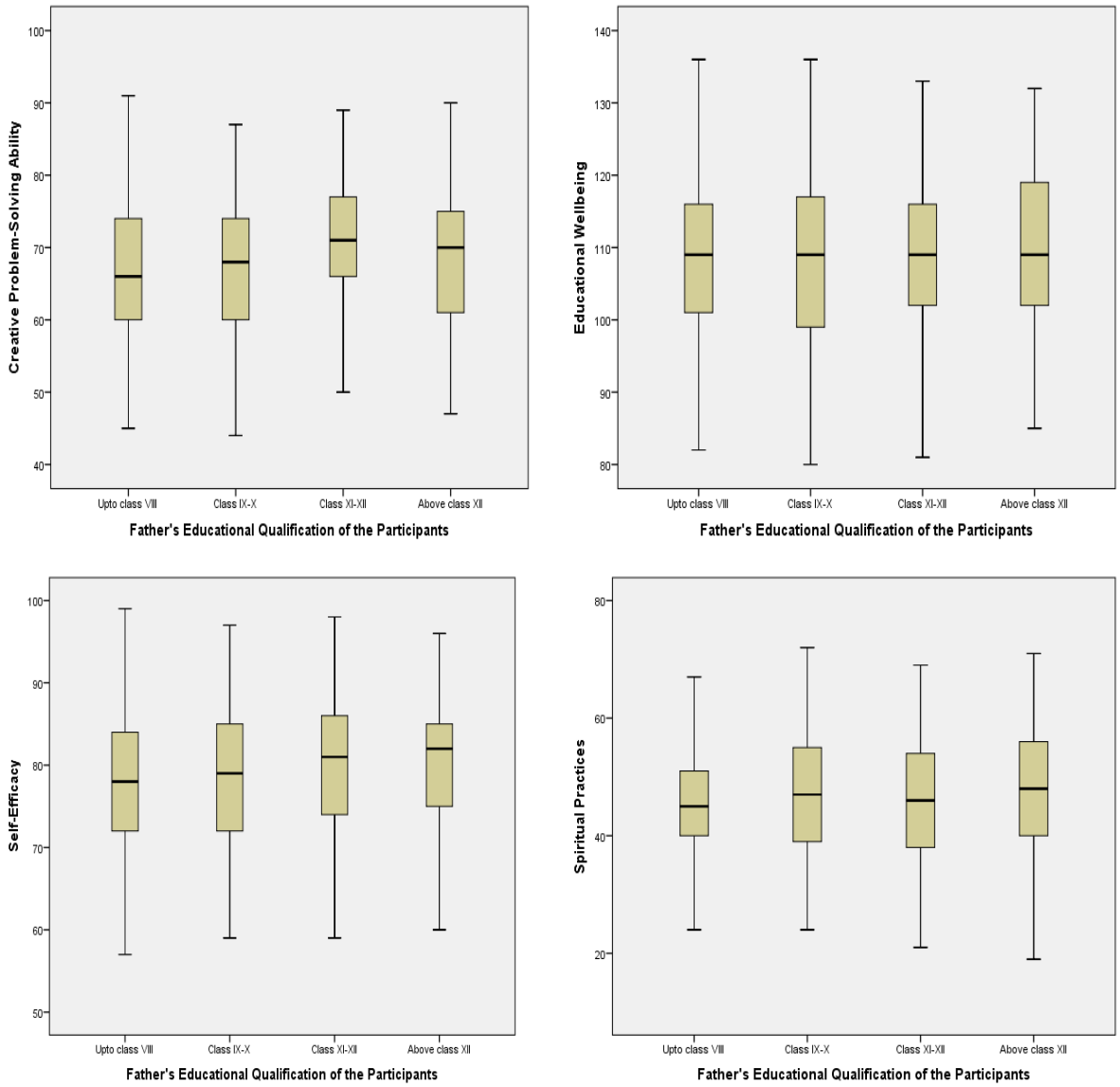


Fig. 5.7. Father's Educational Qualification-wise Data Normality Test of CPSA, EW, SE, and SP

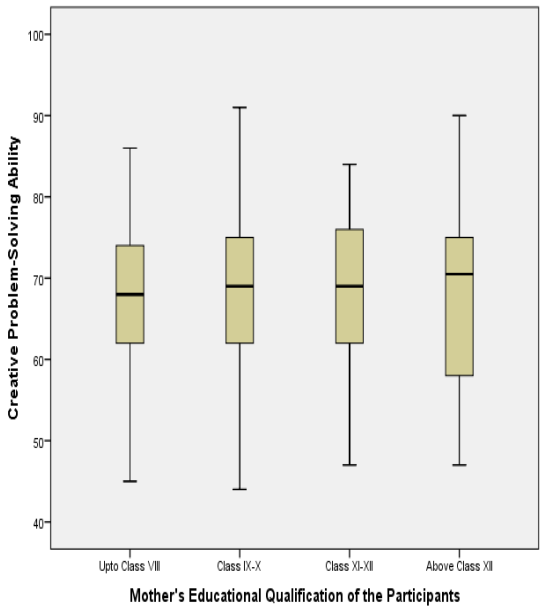
Interpretation

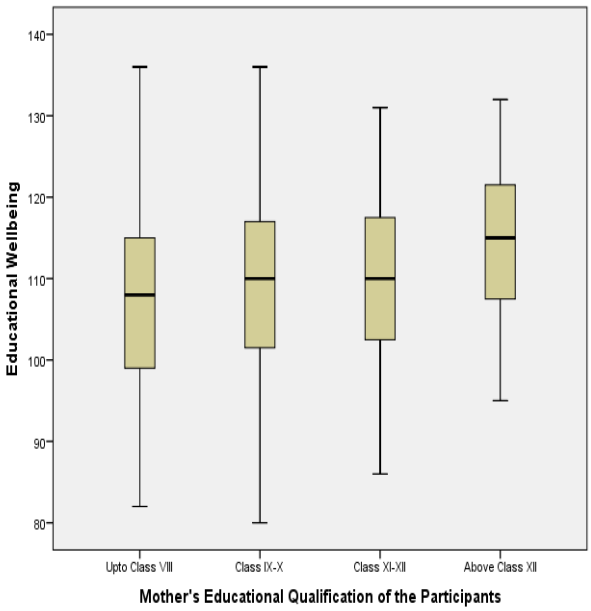
Across all categories of fathers' educational qualifications, the skewness and kurtosis values for CPSA, EW, SE, and SP remained within acceptable normality thresholds (skewness within ±1 and kurtosis within ±1 to ±2). The skewness values were consistently close to zero, indicating largely symmetrical distributions across all groups. Similarly, the kurtosis values showed mild negative kurtosis for most variables, suggesting slightly flatter-than-normal distributions but still falling within permissible limits for assuming normality. Overall, the data demonstrated that all four psychological variables exhibit approximately normal distributions across the different levels of fathers' educational qualifications, thereby supporting the suitability of applying parametric statistical analyses.

Table 5.8. Mother's Educational Qualification-wise Data Normality Test of Creative Problem-Solving Ability, Educational Wellbeing, Self-Efficacy, and Spiritual Practices

Measured Variable	**Mother's Educational Qualification**	**Statistics**	**Statistic**	**Std. Error**
CPSA	Up to Class VIII	Skewness	-.306	.154
		Kurtosis	-.426	.307
	Class IX-X	Skewness	-.194	.134
		Kurtosis	-.639	.267
	Class XI - XII	Skewness	-.231	.243
		Kurtosis	-.993	.481
	Above Class XII	Skewness	-.179	.374
		Kurtosis	-.878	.733
EW	Up to Class VIII	Skewness	-.016	.154
		Kurtosis	-.088	.307
	Class IX-X	Skewness	-.317	.134
		Kurtosis	-.465	.267
	Class XI - XII	Skewness	.052	.243
		Kurtosis	-.503	.481
	Above Class XII	Skewness	-.244	.374
		Kurtosis	-.747	.733
SE	Up to Class VIII	Skewness	-.065	.154
		Kurtosis	-.340	.307

	Class IX-X	Skewness	-.281	.134
		Kurtosis	-.253	.267
	Class XI - XII	Skewness	-.037	.243
		Kurtosis	-.460	.481
	Above Class XII	Skewness	-.303	.374
		Kurtosis	-.787	.733
SP	Up to Class VIII	Skewness	.046	.154
		Kurtosis	-.435	.307
	Class IX-X	Skewness	-.063	.134
		Kurtosis	-.551	.267
	Class XI - XII	Skewness	-.092	.243
		Kurtosis	-.564	.481
	Above Class XII	Skewness	-.330	.374
		Kurtosis	-1.001	.733





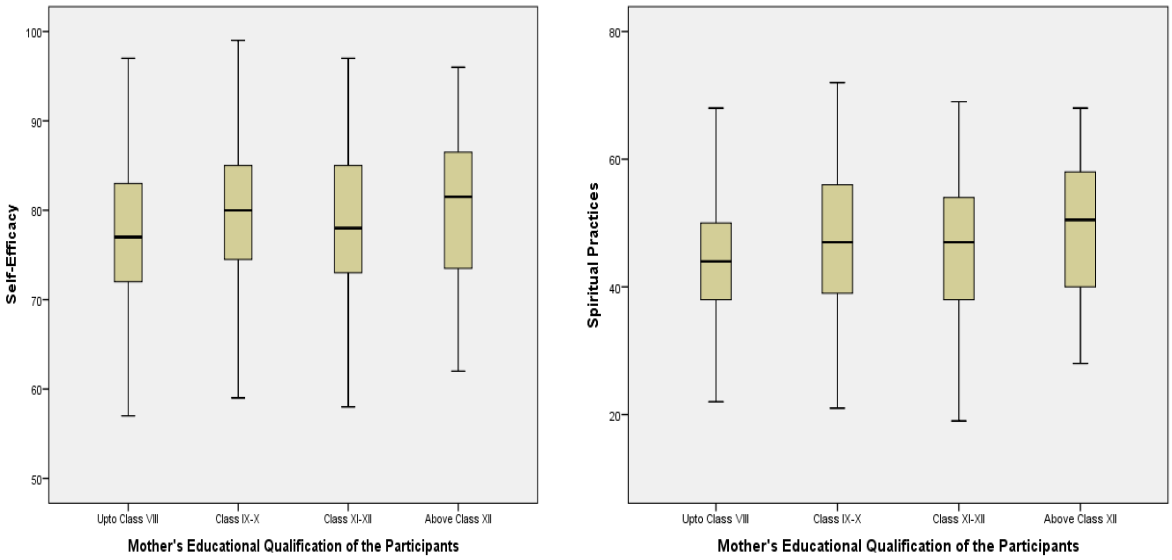


Fig. 5.8. Mother's Educational Qualification Wise Data Normality Test of CPSA, EW, SE, and SP

Interpretation

Across all levels of mothers' educational qualifications, the skewness and kurtosis values for CPSA, EW, SE, and SP remained within acceptable normality limits (skewness within ±1 and kurtosis within ±1 to ±2). The skewness values were close to zero, indicating largely symmetrical distributions, while the kurtosis values showed mild to moderate negative kurtosis, suggesting slightly flatter-than-normal curves. Overall, all four variables demonstrated approximately normal distributions across the groups, supporting the use of parametric statistical analyses.

5.1.2. Levels of Creative Problem-Solving Ability, Educational Wellbeing, Self-Efficacy, and Spiritual Practices

Table 5.9. Levels of Creative Problem-Solving Ability

Category	N	Percentage
Extremely Low in CPSA	11	1.5
Low in CPSA	80	11.1
Below Average in CPSA	186	25.8
Average in CPSA	296	41.1
Above Average in CPSA	135	18.8
High in CPSA	12	1.7
Total	720	100

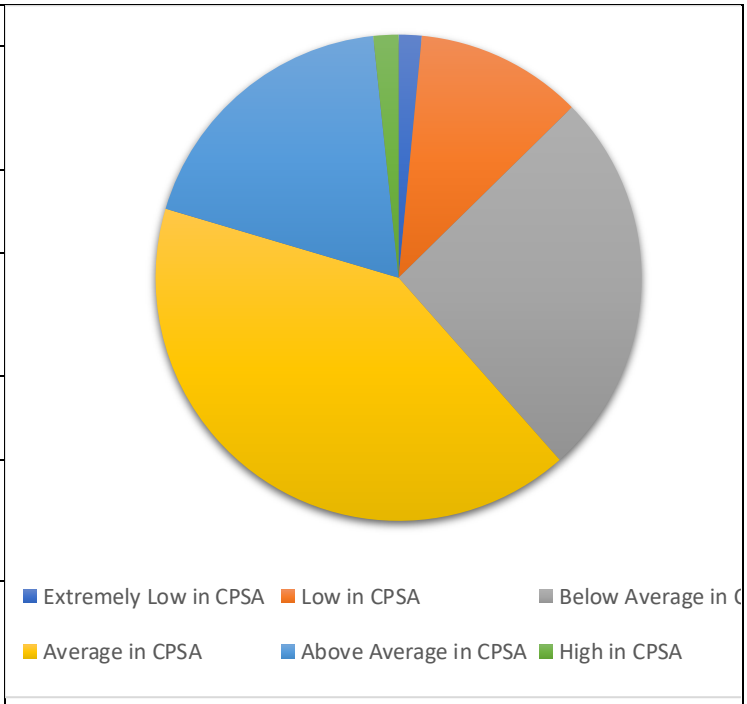


Fig. 5.9. Levels of Creative Problem-Solving Ability

Interpretation

Out of 720 participants, the largest proportion scored in the average range for creative problem-solving ability at 41.1%, followed by below average at 25.8% and above average at 18.8%. Smaller percentages of participants fell into the low (11.1%), high (1.7%), and extremely low (1.5%) categories. This indicates that most participants demonstrated below-average to average levels of creative problem-solving ability.

Table 5.10. Levels of Educational Wellbeing

Category	N	Percentage
Very Low in EW	27	3.8
Low in EW	157	21.8
Average in EW	335	46.5
High in EW	182	25.3
Very High in EW	19	2.6
Total	720	100

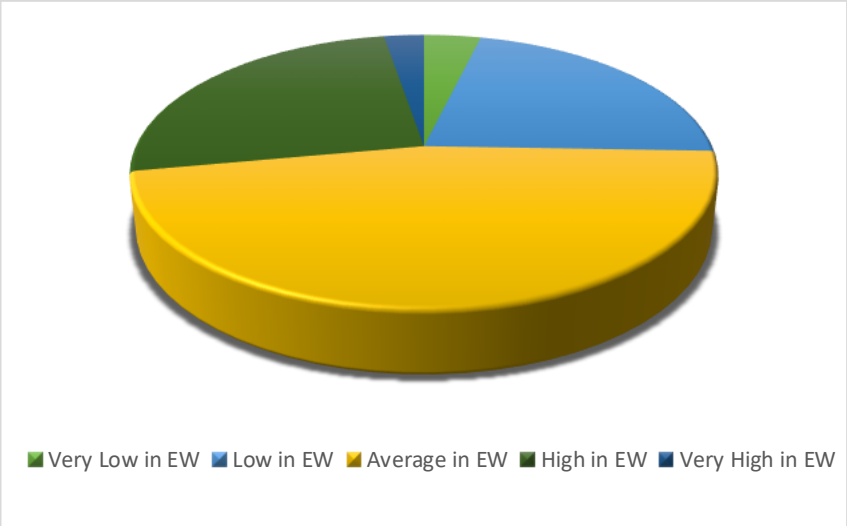


Fig. 5.10. Levels of Educational Wellbeing

Interpretation

Among 720 participants, the largest proportion scored in the average range for educational wellbeing (46.5%), followed by high (25.3%) and low (21.8%). Smaller percentages of participants fell into the very low (3.8%) and very high (2.6%) categories. Overall, most participants demonstrated average to high levels of educational wellbeing.

Table 5.11. Levels of Self-efficacy

Category	**N**	**Percentage**
Very Low in SE	25	3.5
Low in SE	136	18.9
Average in SE	341	47.4
High in SE	185	25.7
Very High in SE	33	4.6
Total	720	100

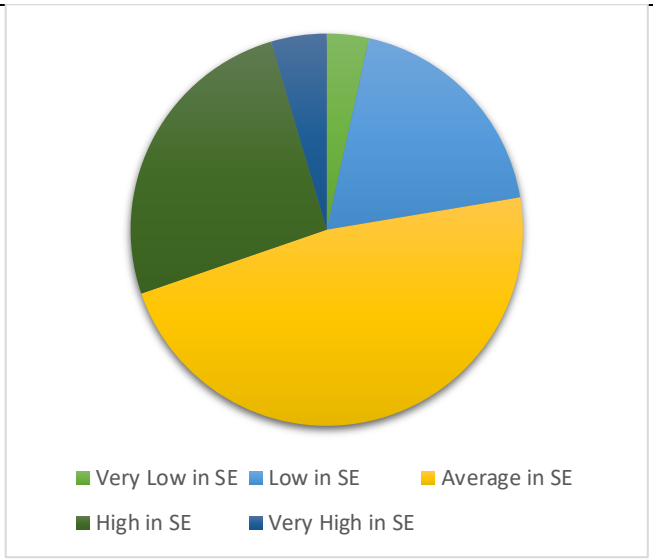


Fig. 5.11. Levels of Self-Efficacy

Interpretation

Among 720 participants, the largest proportion scored in the average range for self-efficacy (47.4%), followed by high (25.7%) and low (18.9%). Smaller percentages were in the very high (4.6%) and very low (3.5%) categories. Overall, most participants exhibited average to high levels of self-efficacy.

Table 5.12. Levels of Spiritual Practices

Category	Frequency	Percentage
Very Low in SP	8	1.1
Low in SP	113	15.7
Average in SP	311	43.2
High in SP	223	31.0
Very High in SP	65	9.0
Total	720	100

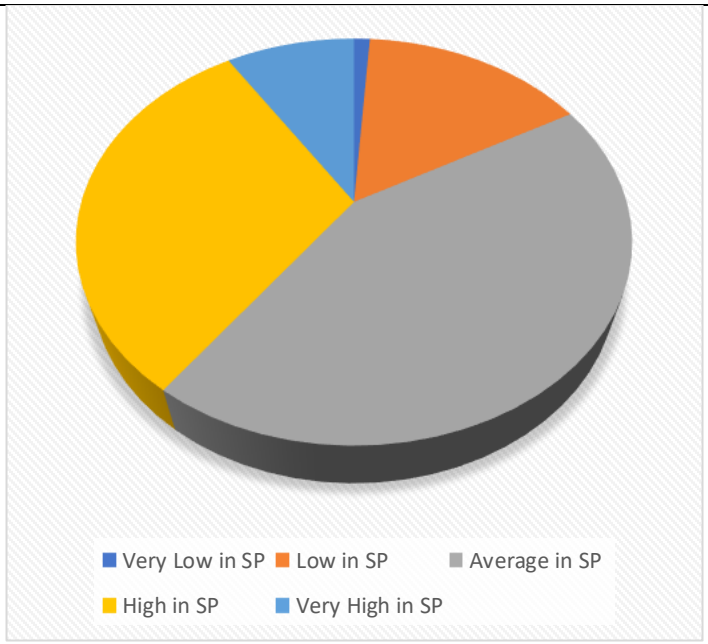


Fig. 5.12. Levels of Spiritual Practices

Interpretation

Among 720 participants, the largest proportion scored in the average range for spiritual practices (43.2%), followed by high (31.0%) and low (15.7%). Smaller percentages were in the very high (9.0%) and very low (1.1%) categories. Overall, most participants demonstrated average to high levels of spiritual practices.

5.1.3. Variations on Creative Problem-Solving Ability Concerning Demographic Variables

$H_0$1: There is no significant difference in creative problem-solving ability among school-going adolescents with respect to gender, family type, number of siblings, stream of education, study hours, father's educational qualification, and mother's educational qualification.

$H_0$1(a): Boys and girls do not significant difference in creative problem-solving ability among school going adolescents.

Table 5.13. Comparison of Creative Problem-Solving Ability among School-going Adolescents with Respect to their Gender

Gender	N	M	SD	SEm	t-value	df	Sig (2-tailed)	Remarks
Boys	360	69.13	9.459	.499	3.076	718	.002	*P<0.05*
Girls	360	67.01	8.975	.473				
Total	720							

Interpretation

Table 5.13 shows that, in a gender-wise descriptive analysis of creative problem-solving ability, the 360 boys had a mean score of 69.13 with a standard deviation of 9.459, while the 360 girls had a mean of 67.01 and a standard deviation of 8.975. The mean score for boys was higher than that for girls. To determine whether this difference was statistically significant, the researcher conducted a t-test. The calculated t-value of 3.076 exceeds the critical value at p=<0.05, indicating significance at the 0.05 level. This result leads to the rejection of the null hypothesis, suggesting a significant difference in creative problem-solving ability among school-going adolescents based on gender.

$H_0$1(b): There is no significant difference in creative problem-solving ability among school adolescents concerning their family Type.

Table 5.14. Comparison of Creative Problem-Solving Ability among School-going Adolescents with Respect to their Family Type

Family Type	N	M	SD	SEm	t-value	df	Sig (2-tailed)	Remarks
Joint	218	67.86	9.470	.641	-.392	718	0.695	*P>0.05*
Nuclear	502	68.16	9.196	.410				
Total	720							

Interpretation

Table 5.14 presents the descriptive analysis of creative problem-solving ability based on students' family type. The mean score for students from joint families (m=67.86; SD=9.470) was slightly lower than that of students from nuclear families (m=68.16; SD=9.196). To determine if this difference is statistically significant, the researcher conducted a t-test. The calculated t-value of -.392 is less than the critical value at p>0.05, indicating the difference is not statistically significant at the 0.05 level. This result suggests that the null hypothesis is retained, meaning there is no significant difference in creative problem-solving ability among school-going adolescents based on their family type.

$H_0$1(c): There is no significant difference in creative problem-solving ability among school-going adolescents with respect to the number of siblings.

Table 5.15. Comparison of Creative Problem-Solving Ability among School-going Adolescents with Respect to their Number of Siblings

		N	M	SD	SE
Creative Problem-Solving Ability	Single child	114	68.24	9.834	.921
	Having one sibling	434	68.64	9.051	.434
	Having two siblings	131	67.76	9.203	.804
	Having three and above siblings	41	62.56	8.709	1.360
	Total	720	68.07	9.274	.346

	Sum of Squares	df	Mean Square	F	Sig (1-tailed)
Between Group	1398.819	3	466.273	5.523	.001
Within Group	60444.846	716	84.420		
Total	61843.665	719			

(I) Number of siblings	(J) Number of siblings	Mean Difference (I-J)	Std. Error	Sig.
Single child	Having three and above siblings	5.676*	1.673	.001
Having one sibling	Having three and above siblings	6.075*	1.501	.000
Having two siblings	Having three and above siblings	5.202*	1.644	.002

Interpretation

The table 5.15. showed the mean scores of creative problem-solving ability among adolescents in school. The mean score for single children was 68.24, for those with one sibling 68.64, for those with two siblings 67.76, and for those with three or more siblings 62.56. These descriptive statistics reveal a downward trend in creative problem-solving ability as the number of siblings increases, indicating noticeable differences between the groups. To assess whether these differences are statistically significant, a one-way ANOVA was conducted. The results indicated significant differences in creative problem-solving ability related to the number of siblings, with $F = 5.523$ and $p = 0.001$ ($p < .05$). This confirms that the number of siblings significantly affects the creative problem-solving ability of school-going adolescents.

To further identify specific group differences, the investigator conducted a multiple comparison test using the LSD post-hoc method. The results revealed significant differences between single children and those with three or more siblings (p = 0.001), between those with one sibling and those with three or more siblings (p = 0.000), and between those with two siblings and those with three or more siblings (p = 0.002). These findings indicate that adolescents with three or more siblings have significantly lower creative problem-solving abilities compared to the other sibling groups.

$H_0$1(d): students of Science and arts do not significant variances in creative problem-solving ability among school adolescents.

Table 5.16. Comparison of Creative Problem-Solving Ability among School-going Adolescents with Respect to their Stream of Education

Stream of Education	**N**	**M**	**SD**	**SEm**	**t-value**	**df**	**Sig (2-tailed)**	**Remarks**
Arts	404	66.25	9.234	.459	-6.104	718	.000	*P<0.05*
Science	316	70.40	8.806	.495				
Total	720							

Interpretation

Initially, descriptive analysis showed that arts students (n=404) had a mean score of 66.25 with a standard deviation (SD) of 9.234 on creative problem-solving ability, while science students (n=316) had a mean of 70.40 and SD of 8.806. Although science students scored slightly higher, a t-test was conducted to determine if the difference was statistically significant. The calculated t-value of -6.104 exceeds the critical value of 1.96 at $p<0.05$, indicating a significant difference. This leads to rejecting the null hypothesis, suggesting that adolescents differ significantly in creative problem-solving ability by educational stream.

$H_0$1(e): There is no significant variances in the creative problem-solving ability of school adolescents based on their study hours.

Table 5.17. Comparison of Creative Problem-Solving Ability among School-going Adolescents with Respect to their Study Hours

		N	M	SD	SE
Creative Problem-Solving Ability	Up to 2 Hours	84	67.32	9.902	1.080
	3 - 5 Hours	289	67.19	8.951	.527
	5 - 8 Hours	258	69.35	8.999	.560
	9 Hours and Above	89	67.91	10.181	1.079
	Total	720	68.07	9.274	.346

	Sum of Squares	df	Mean Square	F	Sig (1-tailed)
Between Group	694.925	3	231.642	2.712	.044
Within Group	61148.740	716	85.403		
Total	61843.665	719			

(I) Study Hours of the Participants	(J) Study Hours of the Participants	Mean Difference (I-J)	Std. Error	Sig.
3 - 5 Hours	5 - 8 Hours	-2.159*	.792	.007

Interpretation

The table 5.17. showed the average score of creative problem-solving ability among school-going adolescents in relation to their study hours. Students studying up to 2 hours scored an average of 67.32, those studying 3–5 hours scored 67.19, students studying 5–8 hours scored 69.35, and those studying 9 hours or more scored 67.91. These descriptive statistics suggest there are differences in creative problem-solving ability depending on study hours. To determine if these differences are statistically significant, the researcher conducted a one-way ANOVA. Results indicated significant differences in creative problem-solving ability based on study hours, with $F = 2.712$, $p < .05$, and $p = 0.044$. This confirms that study hours significantly influence adolescents' creative problem-solving ability.

The investigator further used multiple comparison (LSD) to examine the actual differences among groups in creative problem-solving ability based on study hours. The

result revealed a significant difference between the 3–5 hours group and the 5–8 hours group (p = 0.007).

$H_0$1(f): There is no statistically significant difference in the creative problem-solving ability of school-going adolescents considering their father's educational qualification.

Table 5.18. Comparison of Creative Problem-Solving Ability among School-going Adolescents with Respect to their Father's Educational Qualification

		N	M	SD	SE
Creative Problem-Solving Ability	Up to class VIII	233	66.87	9.073	.594
	Class IX-X	209	67.18	9.397	.650
	Class XI-XII	177	70.64	8.564	.644
	Above class XII	101	68.16	9.900	.985
	Total	720	68.07	9.274	.346

	Sum of Squares	df	Mean Square	F	Sig (1-tailed)
Between Group	1668.113	3	556.038	6.616	.000
Within Group	60175.552	716	84.044		
Total	61843.665	719			

(I) Father's educational qualification of the Participants	(J) Father's educational qualification of the Participants	Mean Difference (I-J)	Std. Error	Sig.
Up to class VIII	Class XI-XII	-3.767*	.914	.000
Class IX-X	Class XI-XII	-3.457*	.936	.000
Class XI-XII	Above class XII	2.480*	1.143	.030

Interpretation

The table 5.18. showed the average score of creative problem-solving ability among school-going adolescents, categorized by their fathers' education levels. Adolescents with fathers educated up to class VIII scored an average of 66.87, those with fathers having education from class IX–X scored 67.18, for class XI–XII it was 70.64, and for fathers with more than class XII education, the score was 68.16. These descriptive statistics suggest noticeable differences across the groups, with a general upward trend as the father's education level increases. To test if these differences are statistically significant, a one-way ANOVA was conducted. The results indicated significant differences in creative problem-solving ability based on fathers' education, with F = 6.616 and p = 0.000

(p<.05). This confirms that the adolescents' creative problem-solving ability varies significantly with their fathers' educational qualification.

The investigator further conducted multiple comparison (LSD) tests to examine the actual differences among the groups. The results showed significant differences between adolescents whose fathers were educated up to class VIII and those with fathers educated at classes XI–XII (p = 0.000), between class IX–X and class XI–XII (p = 0.000), and between class XI–XII and above class XII (p = 0.030). This indicates that students whose fathers have higher levels of education tend to display significantly better creative problem-solving skills.

$H_0$1(g): There is no notable difference in the creative problem-solving ability of school-going adolescents based on their mother's educational qualification.

Table 5.19. Comparison of Creative Problem-Solving Ability among School-going Adolescents with Respect to their Mother's Educational Qualification

		N	M	SD	SE
Creative Problem-Solving Ability	Up to class VIII	250	67.52	8.816	.558
	Class IX-X	331	68.43	9.459	.520
	Class XI-XII	99	68.35	9.055	.910
	Above class XII	40	67.78	11.091	1.754
	Total	720	68.07	9.274	.346

	Sum of Squares	df	Mean Square	F	Sig (1-tailed)
Between Group	128.626	3	42.875	.497	.684
Within Group	61715.039	716	86.194		
Total	61843.665	719			

Interpretation

The table 5.19. presented the average score of creative problem-solving ability among school-aged adolescents, categorized by their mothers' educational qualifications. The mean score for students whose mothers completed up to class VIII was 67.52; for those with mothers educated through classes IX–X, it was 68.43; for classes XI–XII, it was 68.35; and for mothers with education beyond class XII, it was 67.78. These descriptive statistics suggest minor variations in creative problem-solving skills across different maternal education levels. To assess whether these differences are statistically meaningful, a one-way ANOVA was conducted. The analysis revealed no significant

differences in creative problem-solving ability concerning mothers' education, with an F value of 0.497 and a p-value of 0.684 ($p > .05$). Therefore, there is no evidence of a significant impact of maternal education qualification on adolescents' creative problem-solving skills.

5.1.4. Variations in Educational Wellbeing Concerning Demographic Variables

$H_0$2: There is no significant difference in educational wellbeing among school-going adolescents with respect to gender, family type, number of siblings, stream of education, study hours, father's educational qualification, and mother's educational qualification.

$H_0$2(a): Boys and girls do not significant difference in educational wellbeing among school-going adolescents.

Table 5.20. Comparison on Educational Wellbeing among School-going Adolescents with Respect to their Gender

Gender	N	M	SD	SEm	t-value	df	Sig (2-tailed)	Remarks
Boys	360	106.64	11.824	.623	-4.385	718	.000	*P<0.05*
Girls	360	110.27	10.344	.545				
Total	720							

Interpretation

This independent sample t-test examined differences in educational wellbeing among school-going adolescents based on gender. Descriptive analysis showed that 360 boys had a mean score of 106.64 with a standard deviation (SD) of 11.824, while 360 girls had a higher mean score of 110.27 with an SD of 10.344. Although girls scored higher than boys, the researcher used a t-test to determine if this difference was statistically significant. The calculated t-value was -4.385, which exceeds the critical value of 1.96 at $p<0.05$, indicating the result is statistically significant. This leads to the rejection of the null hypothesis, confirming a significant difference in educational wellbeing between boys and girls.

$H_0$2(b): There is no significant difference between joint and nuclear family's students in educational wellbeing among school-going adolescents.

Table 5.21. Comparison on Educational Wellbeing among School-going Adolescents with Respect to their Family Type

Family Type	N	M	SD	SEm	t-value	df	Sig (2-tailed)	Remarks
Joint	218	108.42	11.452	.776	-.051	718	.960	*P>0.05*
Nuclear	502	108.47	11.171	.499				
Total	720							

Interpretation

The table 5.21. presented a descriptive analysis of educational wellbeing. It shows that 218 students from joint families had a mean score of 108.42 with a standard deviation (SD) of 11.452, while 502 students from nuclear families had a mean of 108.47 and an SD of 11.171. The mean score for students from nuclear families was slightly higher than that for joint families. To determine whether this difference was statistically significant, the researcher performed a t-test. The calculated 't-value' of -0.051 is less than the critical value of 1.96 for p>0.05, indicating the difference is not statistically significant at the 0.05 level. The results suggest that the null hypothesis is retained, meaning there is no significant difference in educational wellbeing among school-going adolescents based on their family type.

$H_0$2(c): number of siblings do not significant difference in educational wellbeing among school-going adolescents.

Table 5.22. Comparison on Educational Wellbeing among School-going Adolescents with Respect to their Number of Siblings

		N	M	SD	SE
Educational Wellbeing	Single child	114	109.00	11.982	1.122
	Having one sibling	434	108.72	10.903	.523
	Having two siblings	131	107.03	12.276	1.073
	Having three and above siblings	41	108.63	9.162	1.431
	Total	720	108.45	11.248	.419

	Sum of Squares	df	Mean Square	F	Sig (1-tailed)
Between Group	332.277	3	110.759	.875	.454
Within Group	90640.210	716	126.592		
Total	90972.488	719			

Interpretation

The table 5.22. showed the average educational wellbeing scores of school-going adolescents based on their number of siblings. The mean score was 109.00 for single children, 108.72 for those with one sibling, 107.03 for those with two siblings, and 108.63

for those with three or more siblings. These initial statistics reveal slight differences among sibling groups, with scores marginally decreasing as the number of siblings increases. To assess whether these differences are statistically significant, a one-way ANOVA was conducted. The results indicated no significant variation in educational wellbeing across sibling groups, with F = 0.875 and p = 0.454 (p > .05). Therefore, there is no evidence of a significant difference in educational wellbeing related to the number of siblings.

$H_0$2(d): There is no significant variances between science and arts students in educational wellbeing among school-going adolescents.

Table 5.23 Comparison on Educational Wellbeing among School-going Adolescents with Respect to their Stream of Education

Stream of Education	**N**	**M**	**SD**	**SEm**	**t-value**	**df**	**Sig (2-tailed)**	**Remarks**
Arts	404	108.06	10.916	.543	-1.072	718	.284	*P>0.05*
Science	316	108.96	11.657	.656				
Total	720							

Interpretation

This independent sample 't-test' analysis began with descriptive statistics, showing that 404 arts students had a mean educational wellbeing score of 108.06 with a standard deviation (SD) of 10.916, while 316 science students had a mean of 108.96 with an SD of 11.657. The average score of science students was slightly higher than that of arts students. To determine if this difference was statistically significant, the researcher conducted a t-test. The calculated 't-value' of -1.072 was less than the critical value of 1.96, indicating p>0.05, which means the result is not statistically significant at the 0.05 level. The findings suggest that the null hypothesis is retained. Therefore, there is no significant difference in educational wellbeing among school-going adolescents based on their stream of education.

$H_0$2(e): There is no significant difference in educational wellbeing among adolescents attending school based on their study hours.

Table 5.24. Comparison of Educational Wellbeing among School-going Adolescents with Respect to their Study Hours

		N	M	SD	SE
Educational Wellbeing	Up to 2 Hours	84	103.29	11.165	1.218
	3 - 5 Hours	289	107.11	11.140	.655
	5 - 8 Hours	258	110.47	10.975	.683
	9 Hours and above	89	111.84	10.164	1.077
	Total	720	108.45	11.248	.419

	Sum of Squares	df	Mean Square	F	Sig (1-tailed)
Between Group	4832.063	3	1610.688	13.388	.000
Within Group	86140.424	716	120.308		
Total	90972.487	719			

(I) Study Hours of the Participants	(J) Study Hours of the Participants	Mean Difference (I-J)	Std. Error	Sig.
Up to 2 Hours	3 - 5 Hours	-3.828*	1.360	.005
	5 - 8 Hours	-7.183*	1.378	.000
	9 Hours and above	-8.557*	1.669	.000
3 - 5 Hours	5 - 8 Hours	-3.355*	.939	.000
	9 Hours and above	-4.729*	1.330	.000

Interpretation

The table 5.24. showed the average educational wellbeing scores of school-going adolescents based on their study hours. Students studying up to 2 hours had an average score of 103.29, those studying 3–5 hours scored 107.11, 5–8 hours corresponded to 110.47, and students studying 9 hours or more had a mean score of 111.84. These descriptive statistics suggest that educational wellbeing generally increases with more study hours, and there are differences among students depending on their study time. To determine if these differences are statistically significant, a one-way ANOVA was performed. The results indicated significant differences in educational wellbeing related to study hours, with $F = 13.388$, $p < .05$, and $p = 0.000$. This confirms that study hours significantly affect the educational wellbeing of school-going adolescents.

The investigator performed a multiple comparison test with the LSD post-hoc method to pinpoint specific group differences. The findings showed significant differences between: up to 2 hours and 3–5 hours (p = 0.005), up to 2 hours and 5–8 hours (p = 0.000), up to 2 hours and 9 hours and above (p = 0.000), 3–5 hours and 5–8 hours (p = 0.000), and 3–5 hours and 9 hours and above (p = 0.000).

$H_0$2(f): There is no statistically significant difference in educational wellbeing among school-going adolescents concerning their father's educational qualification.

Table 5.25. Comparison of Educational Wellbeing among School-going Adolescents with Respect to their Father's Educational Qualification

		N	M	SD	SE
Educational Wellbeing	Up to class VIII	233	108.38	10.610	.695
	Class IX-X	209	107.38	12.294	.850
	Class XI-XII	177	108.77	10.961	.824
	Above class XII	101	110.30	10.805	1.075
	Total	720	108.45	11.248	.419

	Sum of Squares	df	Mean Square	F	Sig (1-tailed)
Between Group	601.754	3	200.585	1.589	.191
Within Group	90370.734	716	126.216		
Total	90972.487	719			

Interpretation

The table 5.25. showed the average educational wellbeing scores for school-going adolescents based on their father's educational qualification: Up to class VIII (mean = 108.38), classes IX–X (mean = 107.38), classes XI–XII (mean = 108.77), and above class XII (mean = 110.30). These descriptive statistics suggest slight variations across different educational levels of fathers. To check if these differences are statistically significant, a one-way ANOVA was performed. The results indicated no significant differences in educational wellbeing among the groups, with F = 1.589 and p = 0.191 (> .05). Therefore, it means that a father's educational qualification does not significantly affect the educational wellbeing of school-going adolescents.

$H_0$2(g): There is no statistically significant difference in educational wellbeing among school-going adolescents with respect to their mother's educational qualification.

Table 5.26. Comparison of Educational Wellbeing among School-going Adolescents with Respect to their Mother's Educational Qualification

		N	M	SD	SE
Educational Wellbeing	Up to class VIII	250	106.90	10.416	.659
	Class IX-X	331	108.55	11.900	.654
	Class XI-XII	99	110.09	10.617	1.067
	Above class XII	40	113.33	10.574	1.672
	Total	720	108.45	11.248	.419

	Sum of Squares	df	Mean Square	F	Sig (1-tailed)
Between Group	1824.410	3	608.137	4.884	.002
Within Group	89148.078	716	124.508		
Total	90972.487	719			

(I) Mother's educational qualification of the Participants	(J) Mother's educational qualification of the Participants	Mean Difference (I-J)	Std. Error	Sig.
Up to class VIII	Class XI-XII	-3.195*	1.325	.016
Up to class VIII	Above Class XII	-6.429*	1.900	.001
Class IX-X	Above Class XII	-4.772*	1.868	.011

Interpretation

The table 5.26. presented the average scores of educational wellbeing among school-going adolescents based on their mothers' educational levels. Students whose mothers completed up to class VIII had a mean score of 106.90, those with mothers in classes IX–X scored 108.55, for classes XI–XII it was 110.09, and for mothers above class XII, it reached 113.33. These descriptive statistics suggest that differences in educational wellbeing exist depending on maternal education. To determine if these differences are statistically significant, the researcher conducted a one-way ANOVA. The analysis revealed significant differences in educational wellbeing related to mothers' educational qualification, with $F = 4.884$ and $p = 0.002$, indicating these variations are meaningful. Consequently, there is a significant association between students' educational wellbeing and their mothers' educational levels.

The investigator also performed a multiple comparison (LSD) test to pinpoint the groups with significant differences. The results showed notable differences between up to class

VIII and classes XI–XII (p = 0.016), up to class VIII and above class XII (p = 0.001), and between classes IX–X and above class XII (p = 0.011).

5.1.5. Variations in Self-Efficacy Concerning Demographic Variables

$H_0$3: There is no significant difference in self-efficacy among school-going adolescents with respect to gender, family type, number of siblings, stream of education, study hours, parents' educational qualification, and mother's educational qualification.

$H_0$3(a): There is no significant difference in self-efficacy among school-going adolescents regarding gender

Table 5.27. Comparison on Self-Efficacy among School-going Adolescents with Respect to their Gender

Gender	N	M	SD	SEm	t-value	df	Sig (2-tailed)	Remarks
Boys	360	78.48	8.577	.452	-1.103	718	.271	*P>0.05*
Girls	360	79.17	8.319	.438				
Total	720							

Interpretation

The table 5.27. showed that the 360 boys had a mean self-efficacy score of 78.48 with a standard deviation (SD) of 8.577, while the 360 girls had a mean of 79.17 and an SD of 8.319. The girls' mean score was slightly higher than that of the boys. However, to determine if this difference was statistically significant, the researcher conducted a t-test. The calculated t-value of -1.103 was less than the critical value of 1.96 for p>0.05, indicating the difference is not statistically significant at the 0.05 level. This result supports accepting the null hypothesis, showing there is no meaningful gender-based difference in self-efficacy among school-going adolescents.

$H_0$3(b): There is no significant difference in self-efficacy among school-going adolescents concerning family type.

Table 5.28. Comparison of Self-Efficacy among School-going Adolescents with Respect to their Family Type

Family Type	N	M	SD	SEm	t-value	df	Sig (2-tailed)	Remarks
Joint	218	77.79	7.928	.537	-2.168	718	.031	*P<0.05*
Nuclear	502	79.27	8.637	.385				
Total	720							

Interpretation

The table 5.28. showed that the self-efficacy of school-going adolescents from 218 joint families had a mean score of 77.79 with a standard deviation (SD) of 7.928, while students from 502 nuclear families had a mean of 79.27 and SD of 8.637. The mean score for students from nuclear families was higher than that for joint families. To determine if this difference was statistically significant, the researcher conducted a t-test. The calculated 't-value' of -2.168 exceeded the critical value of 1.96 for p=<0.05, indicating significance at the 0.05 level. This leads to the rejection of the null hypothesis, suggesting a significant difference in self-efficacy between adolescents based on their family type.

$H_0$3(c): There is no statistically significant variation in self-efficacy among school-going adolescents based on the number of siblings.

Table 5.29. Comparison of Self-Efficacy among School-going Adolescents with Respect to their Number of Siblings

		N	**M**	**SD**	**SE**
Self-efficacy	Single child	114	80.34	8.056	.755
	Having one sibling	434	78.98	8.343	.400
	Having two siblings	131	77.43	8.413	.735
	Having three and above siblings	41	77.34	10.061	1.571
	Total	720	78.82	8.450	.315

	Sum of Squares	**df**	**Mean Square**	**F**	**Sig (1-tailed)**
Between Group	619.419	3	206.473	2.915	.034**
Within Group	50721.826	716	70.841		
Total	51341.244	719			

(I) Number of siblings	**(J) Number of siblings**	**Mean Difference (I-J)**	**Std. Error**	**Sig.**
Single Child	Having Two siblings	2.915*	1.078	.007

Interpretation

The table 5.29. showed the average self-efficacy scores among school adolescents based on their number of siblings. The mean score was 80.34 for only children, 78.98 for those with one sibling, 77.43 for those with two siblings, and 77.34 for those with three or more siblings. These initial data indicate a downward trend in self-efficacy as the number of siblings increases. A one-way ANOVA was performed to assess whether these differences were statistically significant. The results indicated a significant difference in

self-efficacy among the sibling groups, with F= 2.915 and p = 0.034 (p < .05). Therefore, there is a statistically significant variation in self-efficacy among school-going adolescents based on the number of siblings they have.

A multiple comparison test with the LSD post-hoc method was used to identify which groups differed. The findings revealed a significant difference between single children and those with two siblings (p = 0.007). No other pairwise comparisons reached significance. This indicates that single children have significantly higher self-efficacy than those with two siblings.

$H_0$3(d): There is no significant variation in self-efficacy among school adolescents regarding their stream of education.

Table 5.30. Comparison of Self-Efficacy among School-going Adolescents with Respect to their Stream of Education

Stream of Education	**N**	**M**	**SD**	**SEm**	**t-value**	**df**	**Sig (2-tailed)**	**Remarks**
Arts	404	77.66	8.517	.424	-4.209	718	.000	*P<0.05*
Science	316	80.30	8.139	.458				
Total	720							

Interpretation

This independent sample 't-test' begins with descriptive analysis showing that arts students (n=404) had a mean self-efficacy score of 77.66 with an SD of 8.517, while science students (n=316) had a mean of 80.30 and SD of 8.139. The mean score of science students was slightly higher than that of arts students. To determine if this difference is statistically significant, a t-test was performed. The calculated 't-value' of -4.209 exceeds the critical value of 1.96 for p<0.05, indicating significance at the 0.05 level. This leads to rejecting the null hypothesis, suggesting a significant difference in self-efficacy among adolescents by stream of education.

$H_0$3(e): There is no significant difference in self-efficacy among school-going adolescents regarding their study hours.

Table 5.31. Comparison of Self-Efficacy among School-going Adolescents with Respect to their Study Hours

		N	M	SD	SE
Self-Efficacy	Up to 2 Hours	84	74.67	7.796	.851
	3 - 5 Hours	289	77.84	8.262	.486
	5 - 8 Hours	258	79.96	8.462	.527
	9 Hours and Above	89	82.63	7.452	.790
	Total	720	78.82	8.450	.315

	Sum of Squares	df	Mean Square	F	Sig (1-tailed)
Between Group	3349.290	3	1116.430	16.656	.000
Within Group	47991.955	716	67.028		
Total	51341.244	719			

(I) Study Hours of the Participants	(J) Study Hours of the Participants	Mean Difference (I-J)	Std. Error	Sig.
Up to 2 Hours	3 - 5 Hours	-3.178*	1.015	.002
	5 - 8 Hours	-5.291*	1.028	.000
	9 Hours and Above	-7.963*	1.245	.000
3 - 5 Hours	5 - 8 Hours	-2.113*	.701	.003
	9 Hours and Above	-4.785*	.992	.000
5 - 8 Hours	9 Hours and Above	-2.672*	1.006	.008

Interpretation

The table above shows the average self-efficacy scores among school-going adolescents concerning their daily study hours. Students studying up to 2 hours had a mean score of 74.67, those studying 3–5 hours scored 77.84, 5–8 hours corresponded to 79.96, and students studying 9 hours or more had an average score of 82.63. These descriptive statistics suggest that self-efficacy generally increases with more study hours, indicating noticeable differences based on study duration. To verify if these differences were statistically significant, a one-way ANOVA was conducted. The analysis revealed significant differences in self-efficacy related to study hours, with $F = 16.656$, $p < .05$, and $p = 0.000$. This indicates a significant variation in self-efficacy among adolescents depending on the number of hours they study daily.

The investigator also performed multiple comparison (LSD) tests to pinpoint specific group differences. The findings showed significant differences between: up to 2 hours

and 3–5 hours (p = 0.002), up to 2 hours and 5–8 hours (p = 0.000), up to 2 hours and 9 hours or more (p = 0.000), 3–5 hours and 5–8 hours (p = 0.003), 3–5 hours and 9 hours or more (p = 0.000), and 5–8 hours and 9 hours or more (p = 0.008).

$H_0$3(f): There is no significant difference in self-efficacy among school-going adolescents based on their father's educational qualification.

Table 5.32. Comparison of Self-Efficacy Among School-Going Adolescents Based on Their Father's Educational Qualification

		N	M	SD	SE
Self-Efficacy	Up to class VIII	233	77.58	8.279	.542
	Class IX-X	209	78.48	8.774	.607
	Class XI-XII	177	80.14	8.336	.627
	Above class XII	101	80.09	7.965	.793
	Total	720	78.82	8.450	.315

	Sum of Squares	df	Mean Square	F	Sig (1-tailed)
Between Group	849.530	3	283.177	4.016	.008
Within Group	50491.715	716	70.519		
Total	51341.244	719			

(I) Father's educational qualification of the Participants	(J) Father's educational qualification of the Participants	Mean Difference (I-J)	Std. Error	Sig.
Up to class VIII	Class XI-XII	-2.552*	.837	.002
Up to class VIII	Above class XII	-2.505*	1.000	.012

Interpretation

The table 5.32. showed the average self-efficacy scores of school-going adolescents based on their fathers' level of education. Adolescents whose fathers completed up to class VIII had a mean score of 77.58. Those with fathers educated up to classes IX–X scored an average of 78.48, while those with fathers educated up to classes XI–XII had a mean of 80.14. Children of fathers with education above class XII had a mean score of 80.09. These descriptive statistics suggest that self-efficacy tends to increase as the father's educational level rises, indicating noticeable differences between groups. A one-way ANOVA confirmed that these differences are statistically significant, with F = 4.016 and p = 0.008 (p < .05). This demonstrates that the father's educational qualification significantly influences adolescents' self-efficacy.

Additionally, a multiple comparison (LSD) post-hoc test was conducted to pinpoint specific group differences. The findings showed significant distinctions between adolescents whose fathers' education was up to class VIII and those with fathers educated up to class XI–XII (p = 0.002), as well as between school-going adolescents with fathers educated up to class VIII and those with fathers educated above class XII (p = 0.012). No other pairwise differences reached significance.

$H_0$3(g): There is no significant difference in self-efficacy among school-going adolescents with respect to their mother's educational qualification

Table 5.33. Comparison of Self-Efficacy among School-going Adolescents with Respect to their Mother's Educational Qualification

		N	M	SD	SE
Self-Efficacy	Up to class VIII	250	77.17	8.239	.521
	Class IX-X	331	79.93	8.192	.450
	Class XI-XII	99	78.85	9.125	.917
	Above class XII	40	79.93	8.766	1.386
	Total	720	78.82	8.450	.315

	Sum of Squares	df	Mean Square	F	Sig (1-tailed)
Between Group	1133.878	3	377.959	5.390	.001
Within Group	50207.366	716	70.122		
Total	51341.244	719			

(I) Mother's educational qualification of the Participants	(J) Mother's educational qualification of the Participants	Mean Difference (I-J)	Std. Error	Sig.
Up to class VIII	Class IX-X	-2.755*	.702	.000

Interpretation

The table 5.33. showed the average self-efficacy scores among school adolescents in relation to their mothers' education levels. Students whose mothers completed up to class VIII had a mean score of 77.17, those with mothers educated up to classes IX–X scored 79.93, students in classes XI–XII scored 78.85, and those with mothers above class XII scored 79.93. These descriptive statistics suggest there are differences in self-efficacy depending on their mothers' education. To test if these differences are statistically significant, a one-way ANOVA was performed, which found a significant variation (F =

5.390, p < .05, p = 0.001). This indicates that the self-efficacy levels of school-going adolescents vary significantly based on their mothers' educational qualification.

Additionally, a multiple comparison test with the LSD post-hoc method was conducted to determine which groups differed. The findings revealed a significant difference between the group with mothers educated up to class VIII and the group with mothers educated up to class IX–X (p = 0.000).

5.1.6. Variations in Spiritual Practices Concerning Demographic Variables

$H_0$4: There is no significant difference in spiritual practices among school-going adolescents with respect to gender, family type, number of siblings, stream of education, study hours, father's educational qualification, and mother's educational qualification.

$H_0$4(a): There is no significant difference in spiritual practices among school-going adolescents with respect to gender

Table 5.34. Comparison on Spiritual Practices among School-going Adolescents with Respect to their Gender

Gender	N	M	SD	SEm	t-value	df	Sig (2-tailed)	Remarks
Boys	360	45.25	10.380	.547	-2.434	718	.015	*P<0.05*
Girls	360	47.10	9.982	.526				
Total	720							

Interpretation

This independent sample 't-test' began with descriptive analysis, showing that the 360 boys had a mean of 45.25 and a standard deviation (SD) of 10.380, while the 360 girls had a mean of 47.10 and an SD of 9.982. The mean score for girls is higher than that for boys. To determine whether this difference is statistically significant, the researcher conducted a t-test. The calculated 't-value' of -2.434 exceeds the critical value of 1.96 for p<0.05, indicating significance at the 0.05 level. This leads to the rejection of the null hypothesis, suggesting a significant difference in spiritual practices among school-going adolescents based on gender.

$H_0$4(b): There is no significant difference in spiritual practices among school-going adolescents with respect to family type

Table 5.35. Comparison on Spiritual Practices among School-going Adolescents with Respect to their Family Type

Family Type	N	M	SD	SEm	t-value	df	Sig (2-tailed)	Remarks
Joint	218	46.22	10.979	.744	.068	718	.946	*P>0.05*
Nuclear	502	46.16	9.880	.441				
Total	720							

Interpretation

The descriptive analysis in the table shows that students from 218 joint families had a mean score of 46.22 with a standard deviation (SD) of 10.979 in spiritual practices. In comparison, students from 502 joint families had a mean score of 46.16 and an SD of 9.880. The mean score of students from joint families was slightly higher than that of students from nuclear families. To determine if this difference was statistically significant, the researcher conducted a t-test. The calculated 't-value' of .068 exceeds the critical value of 1.96 for p>0.05, indicating the difference is not statistically significant at the 0.05 level. The result suggests that the null hypothesis is retained, meaning there is no significant difference in spiritual practices among school-going adolescents based on family type.

$H_0$4(c): There is no significant variation in spiritual practices among school-going adolescents based on the number of siblings.

Table 5.36. Comparison of Spiritual Practices among School-going Adolescents with Respect to their Number of Siblings

		N	M	SD	SE
Spiritual Practices	Single child	114	47.06	10.018	.938
	Having one sibling	434	45.74	10.332	.496
	Having two siblings	131	46.79	9.899	.865
	Having three and above siblings	41	46.34	10.650	1.663
	Total	720	46.18	10.218	.381

	Sum of Squares	df	Mean Square	F	Sig (1-tailed)
Between Group	222.277	3	74.092	.709	.547
Within Group	74840.322	716	104.526		
Total	75062.599	719			

Interpretation

The table 5.36. showed the average scores of spiritual practices among school-going adolescents based on their number of siblings. The average score for single children was

47.06, for those with one sibling 45.74, for two siblings 46.79, and for three or more siblings 46.34. These descriptive statistics reveal slight variations between groups, with no clear pattern of increase or decrease. A one-way ANOVA was performed to assess whether these differences were statistically significant. Results indicated no significant differences in spiritual practices across sibling groups, with F = 0.709 and p = 0.547 (p > .05). Therefore, the number of siblings does not significantly influence the spiritual practices of adolescent students.

$H_0$4(d): There is no significant variation in spiritual practices among school-going adolescents based on their stream of education.

Table 5.37. Comparison of Spiritual Practices among School-going Adolescents with Respect to their Stream of Education

Stream of Education	**N**	**M**	**SD**	**SEm**	**t-value**	**df**	**Sig (2-tailed)**	**Remarks**
Arts	404	46.15	10.021	.499	-.068	718	.946	*P>0.05*
Science	316	46.21	10.479	.589				
Total	720							

Interpretation

This independent sample 't-test' initially showed, through descriptive analysis, that the 404 arts students had a mean score of 46.15 with a Standard Deviation (SD) of 10.021, while the 316 science students had a mean of 46.21 and an SD of 10.479. The mean score for science students was slightly higher than that of arts students. To determine whether this difference was statistically significant, the researcher conducted a t-test. The calculated t-value of -.068 was less than the critical value of 1.96 for p>0.05, indicating the difference is not statistically significant at the 0.05 level. The results suggest that the null hypothesis is accepted, showing no significant difference in spiritual practices among school-going adolescents based on their stream of education.

$H_0$4(e): Study hours do not significant difference in the spiritual practices of school-going adolescents.

Table 5.38. Comparison of Spiritual Practices among School-going Adolescents with Respect to their Study Hours

		N	M	SD	SE
Spiritual Practices	Up to 2 Hours	84	42.01	10.614	1.158
	3 - 5 Hours	289	46.22	10.156	.597
	5 - 8 Hours	258	46.67	9.361	.583
	9 Hours and Above	89	48.53	11.419	1.210
	Total	720	46.18	10.218	.381

	Sum of Squares	df	Mean Square	F	Sig (1-tailed)
Between Group	2013.513	3	671.171	6.579	.000
Within Group	73049.085	716	102.024		
Total	75062.599	719			

(I) Study Hours of the Participants	(J) Study Hours of the Participants	Mean Difference (I-J)	Std. Error	Sig.
Up to 2 Hours	3 - 5 Hours	-4.206*	1.252	.001
	5 - 8 Hours	-4.663*	1.269	.000
	9 Hours and Above	-6.516*	1.537	.000
3 - 5 Hours	9 Hours and Above	-2.310	1.224	.060

Interpretation

The table 5.38. showed the average scores of spiritual practices among school-going adolescents based on their study hours. Students studying up to 2 hours had an average score of 42.01, those studying 3–5 hours scored 46.22, students studying 5–8 hours scored 46.67, and those studying 9 hours or more scored 48.53. These descriptive statistics suggest that spiritual practices vary with the number of study hours. To assess if these differences are statistically significant, a one-way ANOVA was conducted. The results revealed significant differences in spiritual practices relative to study hours, with an F value of 6.579 and $p < .05$ ($p = 0.000$). Therefore, there is statistically significant variation in adolescents' spiritual practices by study hours.

The investigator performed a multiple comparison (LSD) test to pinpoint specific group differences. The results showed significant differences between up to 2 hours and 3–5

hours (p = 0.001), up to 2 hours and 5–8 hours (p = 0.000), up to 2 hours and 9 hours and above (p = 0.000), and between 3–5 hours and 9 hours and above (p = 0.060).

$H_0$4(f): There is no significant variation in spiritual practices among school-going adolescents based on their father's educational qualification.

Table 5.39. Comparison on Spiritual Practices among School-going Adolescents with Respect to their Father's Educational Qualification

		N	M	SD	SE
Spiritual Practices	Up to class VIII	233	45.27	9.535	.625
	Class IX-X	209	46.95	10.486	.725
	Class XI-XII	177	45.47	10.437	.784
	Above class XII	101	47.92	10.589	1.054
	Total	720	46.18	10.218	.381

	Sum of Squares	df	Mean Square	F	Sig (1-tailed)
Between Group	713.230	3	237.743	2.290	.077
Within Group	74349.369	716	103.840		
Total	75062.599	719			

Interpretation

The table 5.39. showed the average scores of spiritual practices among school-going adolescents in relation to their fathers' educational levels. Adolescents with fathers who completed up to class VIII had an average score of 45.27. Those with fathers educated up to classes IX–X had a mean of 46.95, while those whose fathers reached classes XI–XII scored an average of 45.47. Fathers with education beyond class XII corresponded to a mean of 47.92. These descriptive statistics suggest small differences in spiritual practices across different levels of paternal education. A one-way ANOVA was performed to assess if these differences were statistically significant. The results showed no significant variation in spiritual practices by fathers' education, with F = 2.290 and p = 0.077 (p > .05). Therefore, there is no statistically significant difference in spiritual practices among adolescents based on their fathers' educational qualification.

$H_0$4(g): Mother's educational qualification does not significant difference in spiritual practices among school-going adolescents.

Table 5.40. Comparison of Spiritual Practices among School-going Adolescents with Respect to their Mother's Educational Qualification

		N	M	SD	SE
Spiritual Practices	Up to class VIII	250	44.52	9.213	.583
	Class IX-X	331	47.16	10.654	.586
	Class XI-XII	99	45.70	10.447	1.050
	Above class XII	40	49.58	10.485	1.658
	Total	720	46.18	10.218	.381

	Sum of Squares	df	Mean Square	F	Sig (1-tailed)
Between Group	1485.728	3	495.243	4.819	.002
Within Group	73576.871	716	102.761		
Total	75062.599	719			

(I) Mother's educational qualification	(J) Mother's educational qualification	Mean Difference	Std. Error	Sig.
Up to class VIII	Class IX-X	-2.633*	.849	.002
Up to class VIII	Above Class XII	-5.051*	1.726	.004
Class XI-XII	Above Class XII	-3.878*	1.899	.042

Interpretation

The table 5.40. demonstrated the average scores of spiritual practices among school-going adolescents in relation to their mothers' educational levels. Students whose mothers had studied up to class VIII scored an average of 44.52, those in classes IX–X scored 47.16, students in classes XI–XII scored 45.70, and those with mothers having education above class XII scored 49.58. These initial descriptive statistics suggest that variations in spiritual practices are associated with their mothers' education. To assess if these differences are statistically significant, a one-way ANOVA was conducted. The analysis revealed significant differences in spiritual practices based on mothers' education levels, with a calculated F value of 4.819 and a p-value of 0.002 (< .05). This indicates that the differences observed are statistically meaningful.

The investigator also performed a multiple comparison (LSD) test to assess differences in spiritual practices among school-going adolescents based on their mother's educational qualification. The findings showed significant differences between students up to Class VIII and those in Classes IX–X (p = 0.002), between students up to Class VIII and those above Class XII (p = 0.004), and between students in Classes XI–XII and those above Class XII (p = 0.042).

5.1.7. Relationship among CPSA, EW, SE, and SP

$H_0$5: There is no significant relationship among creative problem-solving ability, educational wellbeing, self-efficacy, and spiritual practices among school-going adolescents.

Table 5.41. Relationship among Creative Problem-Solving Ability, Educational Wellbeing, Self-Efficacy, and Spiritual Practices

Variables	Corelation	Educational Wellbeing	Self-efficacy	Spiritual Practices
Creative Problem-Solving ability	Pearson (r)	0.095	0.167	0.051
	Sig (2-tailed)	0.011*	0.000**	0.170
	Remarks	Significant	Significant	Not Significant
Educational Wellbeing	Pearson (r)		0.459	0.406
	Sig (2-tailed)		0.000**	0.000**
	Remarks		Significant	Significant
Self-efficacy	Pearson (r)			0.245
	Sig (2-tailed)			0.000**
	Remarks			Significant

*** 0.01 level of significant and *0.05 level of significant*

Interpretation

The correlation analysis showed that educational wellbeing is significantly and positively linked to creative problem-solving ability, self-efficacy, and spiritual practices. Although the connection between educational wellbeing and creative problem-solving ability is weak (r=0.095, p=0.011), its significance suggests that students with higher creative problem-solving skills tend to have slightly greater educational wellbeing. The strongest association with educational wellbeing was observed with self-efficacy (r=0.459, p=0.000). Spiritual practices also displayed a moderate, positive, and significant correlation (r=0.406, p=0.000). Overall, the findings indicate that self-efficacy and spiritual practices are strongly related to educational wellbeing, while creative problem-solving ability has a smaller but still important impact on adolescents' educational wellbeing.

5.1.8. Contribution of SE, and SP on the Prediction of CPSA

$H_0$6: Self-efficacy does not significantly influence creative problem-solving ability among school-going adolescents.

Table 5.42. Contribution of SE on the Prediction of CPSA

Model Summary					
Model	**R**	**R Square**	**Adjusted R^2**	**SE of Estimate**	
1	.167[a]	.028	.027	9.150	
ANOVA					
Model		**Sum Square**	**df**	**Mean Square**	**F**	**Sig**
1	Regression	1725.691	1	1725.691	20.610	.000[b]
	Residual	60117.974	718	83.730		
	Total	61843.665	719			
a. Dependent Variable: Creative Problem-Solving Ability, b. Predictor: (Constant), Self-Efficacy						
Coefficients						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig**
		B	Std. Error	Beta		
	(Constant)	53.617	3.201		16.748	.000
	SE	.183	.040	.167	4.540	.000

Interpretation

The regression analysis showed R^2 value of 0.028, indicating that self-efficacy accounts for only 2.8% of the variation in creative problem-solving ability. The remaining 97.2% is affected by other factors.

The regression analysis of self-efficacy was significant at $p<0.05$ ($p=.000$), with an F-value of 20.610, indicating its role in predicting creative problem-solving ability. Therefore, self-efficacy is a meaningful predictor of creative problem-solving skills among school-going adolescents.

The above table also indicated that the t value (4.540) in the regression model is significant. Therefore, self-efficacy acts as an individual predictor of creative problem-solving ability among school-going adolescents. Self-efficacy ($\beta=.167$) positively influences creative problem-solving ability.

$H_0$7: Spiritual practices do not significantly influence creative problem-solving ability among school-going adolescents.

Table 5.43. Contribution of SP on the Prediction of CPSA

Model Summary						
Model	**R**	**R Square**	**Adjusted R^2**	**SE of Estimate**		
1	.051[a]	.003	.001	9.269		
ANOVA						
Model		**Sum Square**	**df**	**Mean Square**	**F**	**Sig**
1	Regression	162.113	1	162.113	1.887	.170[b]
	Residual	61681.552	718	85.907		
	Total	61843.665	719			
a. Dependent Variable: Creative Problem-Solving Ability, b. Predictor: (Constant), Spiritual Practices						
Coefficients						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig**
		B	Std. Error	Beta		
	(Constant)	65.922	1.600		41.204	.000
	SP	.046	.034	.051	1.374	.170

Interpretation

The regression table above showed an R^2 value of .003, indicating that spiritual practices account for just 0.3% of the variation in creative problem-solving ability.

Spiritual practices contributed only 0.3% to the ability to solve problems creatively. The rest, 99.7%, was affected by other factors.

The regression analysis showed that spiritual practices were not statistically significant at $p<0.05$ ($p=0.170$) with $F=1.887$ in predicting creative problem-solving ability. Therefore, spiritual practices do not significantly contribute to the prediction of creative problem-solving skills among school-going adolescents.

The above table also indicates that the t value (1.374) in the regression model is not statistically significant. Individually, spiritual practices do not predict creative problem-solving ability among school-going adolescents. Spiritual practices ($\beta = .051$) are not a significant influence on creative problem-solving ability.

$H_0$8: There is no significant combined effect of self-efficacy and spiritual practices on creative problem-solving ability among school-going adolescents.

Table 5.44. Combined Contribution of SE and SP on the Prediction of CPSA

Model Summary						
Model	**R**	**R Square**	**Adjusted R^2**	**SE of Estimate**		
1	.167[a]	.028	.027	9.150		
ANOVA						
Model		**Sum Square**	**df**	**Mean Square**	**F**	**Sig**
1	Regression	1725.691	1	1725.691	20.610	.000[b]
	Residual	60117.974	718	83.730		
	Total	61843.665	719			
a. Dependent Variable: Creative Problem-Solving Ability, b. Predictors:(Constant), self-efficacy						
Coefficients						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig**
		B	Std. Error	Beta		
1	(Constant)	53.617	3.201		16.748	.000
	Self-Efficacy	.183	.040	.167	4.540	.000
Excluded Variables						
Model		**Beta in**	**t**	**Sig**	**Partial Correlation**	**Collinearity Statistics**
1	Spiritual Practices	.011[b]	.288	.773	.011	.940

Interpretation

From the analysis of the above table using multiple regression, it was found that the R^2 value is 0.028 (Stepwise Method), indicating that self-efficacy and spiritual practices account for only 2.8% of the variation in creative problem-solving ability. The remaining 97.2% is attributed to other factors.

The regression analysis of self-efficacy and spiritual practices was found significant at $p<0.05$ ($p=0.000$), with $F = 20.610$, to determine creative problem-solving ability.

The table also indicated that the t-value for self-efficacy in this regression model is a significant ($p<0.05$) contributor to creative problem-solving ability, with each p-value at 0.000. In contrast, spiritual practices were not a significant ($p>0.05$) factor. Thus, self-efficacy is a key predictor of creative problem-solving ability among school-going adolescents. Self-efficacy shows a positive influence ($\beta=0.167$), while spiritual practices

do not significantly predict creative problem-solving ability. Therefore, spiritual practices were excluded from the model.

Therefore, self-efficacy was the only factor that significantly contributed to predicting creative problem-solving ability among school-going adolescents.

5.1.9. Contribution of SE and SP to the Prediction of EW

$H_0$9: Self-efficacy does not significantly influence educational wellbeing among school-going adolescents.

Table 5.45. Contribution of SE on the Prediction of EW

Model Summary						
Model	**R**	**R Square**	**Adjusted R^2**	**SE of Estimate**		
1	.459[a]	.210	.209	10.003		
ANOVA						
Model		**Sum Square**	**df**	**Mean Square**	**F**	**Sig**
1	Regression	19126.012	1	19126.012	191.136	.000[b]
	Residual	71846.476	718	100.065		
	Total	90972.487	719			
a. Dependent Variable: Educational Wellbeing, b. Predictor: (Constant), Self-Efficacy						
Coefficients						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig**
		B	Std. Error	Beta		
1	(Constant)	60.345	3.500		17.243	.000
	Self-efficacy	.610	.044	.459	13.825**	.000

Interpretation

The table above shows that the R^2 value is 0.210, indicating that self-efficacy accounts for just 21% of the variation in educational well-being. The remaining 79% is influenced by other factors.

The regression analysis of self-efficacy is significant at $p<0.05$ ($p=0.000$), with $F = 191.136$, indicating its role in determining educational wellbeing. Therefore, self-efficacy significantly contributes to predicting educational wellbeing among school-going adolescents.

The above table also showed that the t-value (13.825) is significant ($p<0.05$), which means self-efficacy is a significant predictor of educational wellbeing among school-

going adolescents. Self-efficacy (β=0.459) has a positive influence on educational wellbeing.

$H_0$10: Spiritual practices do not significantly influence educational wellbeing among school-going adolescents.

Table 5.46. Contribution of SP on the Prediction of EW

Model Summary					
Model	**R**	**R Square**	**Adjusted R^2**	**SE of Estimate**	
1	.406	.165	.164	10.284	
ANOVA					
Modqel		**Sum Square**	**df**	**Mean Square**	**F**	**Sig**
1	Regression	15030.688	1	15030.688	142.109	.000[b]
	Residual	75941.800	718	105.769		
	Total	90972.487	719			
a. Dependent Variable: Educational Wellbeing, b. Predictor: (Constant), Spiritual Practices						
Coefficients					
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig**
		B	Std. Error	Beta		
1	(Constant)	87.791	1.775		49.454	.000
	Spiritual Practices	.447	.038	.406	11.921	.000

Interpretation

The regression table above indicated an R^2 value of .165, meaning spiritual practices accounted for just 16.5% of the variation in educational well-being. The remaining 83.5% was affected by other factors.

The regression analysis showed that spiritual practices significantly predicted educational wellbeing, with $p<0.05$ ($p=0.000$) and $F=142.109$. This indicates that spiritual practices are an important factor in forecasting educational wellbeing among school-going adolescents.

The table above also indicates that the t-value (11.921) in the regression model is significant. Individually, spiritual practices serve as predictors of educational wellbeing among school-going adolescents. Specifically, spiritual practices (β=.406) positively influence educational wellbeing.

$H_0$11: There is no significant combined contribution of self-efficacy and spiritual practices in predicting educational wellbeing among school-going adolescents.

Table 5.47. Combined Contribution of SE and SP on the Prediction of EW

Model Summary				
Model	**R**	**R Square**	**Adjusted R^2**	**SE of Estimate**
2	.550[b]	.302	.300	9.409

ANOVA						
Model	**Sum Square**		**df**	**Mean Square**	**F**	**Sig**
2	Regression	27502.401	2	13751.2	155.343	.000[c]
	Residual	63470.087	717	88.522		
	Total	90972.487	719			

a. Dependent Variable: Educational Wellbeing, c. Predictors:(Constant), Self-efficacy and Spiritual practices

Coefficients						
Model	**Unstandardized Coefficients**			**Standardized Coefficients**	**t**	**Sig**
	B		Std. Error	Beta		
2	(Constant)	52.476	3.390		15.481	.000
	SE	.508	.043	.382	11.870	.000
	SP	.345	.035	.313	9.728	.000

Interpretation

The analysis of the multiple regression from the table showed an R^2 value of 0.302 (Stepwise Method), indicating that self-efficacy and spiritual practices together explain only 30% of the variability in educational wellbeing. The remaining 70% is affected by other factors.

The regression analysis of self-efficacy and spiritual practices was found significant at $p<0.05$ ($p=0.000$), with an F value of 155.343, to determine educational wellbeing. Hence, it means that self-efficacy and spiritual practices have a combined significant contribution in predicting educational wellbeing among school-going adolescents.

The above table also indicates that the t-value in this regression model is significant ($p<0.05$). Self-efficacy and spiritual practices were key predictors of educational

wellbeing, with both having p-values of 0.000. Self-efficacy had the strongest positive impact on help (β=0.382), followed by spiritual practices (β=0.313).

5.1.10. Contribution of CPSA on the Prediction of EW

$H_0$12: Creative problem-solving ability does not significantly influence educational wellbeing among school-going adolescents.

Table 5.48. Contribution of CPSA on the Prediction of EW

Model Summary						
Model	**R**	**R Square**	**Adjusted R^2**	**SE of Estimate**		
	.095[a]	.009	.008	11.206		
ANOVA						
Model		**Sum Square**	**df**	**Mean Square**	**F**	**Sig**
	Regression	816.210	1	816.210	6.500	.011[b]
	Residual	90156.278	718	125.566		
	Total	90972.487	719			
a. Dependent Variable: EW, b. Predictor: (Constant): CPSA						
Coefficients						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig**
		B	Std. Error	Beta		
	(Constant)	100.634	3.095		32.511	.000
	CPSA	.115	.045	.095	2.550	.011

Interpretation

The above table showed that the R^2 value was .009, which means that the creative problem-solving ability only explains .9% of the variation in educational wellbeing. The remaining 99.1% is contributed by other factors.

The regression analysis of creative problem-solving ability was found to be significant at $p<0.05$ ($p=0.011$), with $F = 6.500$, in predicting educational wellbeing. Therefore, it indicates a significant contribution of creative problem-solving ability in predicting educational wellbeing among school-going adolescents.

The table indicated that the t value (2.550) was significant ($p<0.05$). Creative problem-solving ability emerged as an individual predictor of educational wellbeing among school

adolescents. Specifically, creative problem-solving ability (β=.095) positively influenced educational wellbeing.

5.1.11. Contribution of CPSA, SE, and SP on the Prediction of EW

$H_0$13: There is no significant combined contribution of creative problem-solving ability, self-efficacy, and spiritual practices in predicting educational wellbeing among school-going adolescents.

Table 5.49. Combined Contribution of CPSA, SE, and SP on the Prediction of EW

Model Summary					
Model	**R**	**R Square**	**Adjusted R^2**	**SE of Estimate**	
2	.550[b]	.302	.300	9.409	
ANOVA					
Model		**Sum Square**	**df**	**Mean Square**	**F**	**Sig**
2	Regression	27502.401	2	13751.2	155.343	.000[c]
	Residual	63470.087	717	88.52		
	Total	90972.487	719			
a. Dependent Variable: Education Wellbeing, b. Predictors:(Constant), self-efficacy, and spiritual practices						
Coefficients						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig**
		B	Std. Error	Beta		
2	(Constant)	52.47	3.390		15.481	.000
	Self-Efficacy	.508	.043	.382	11.870	.000
	Spiritual Practices	.345	.035	.313	9.728	.000
Excluded Variables						
Model		**Beta in**	**t**	**Sig**	**Partial Correlation**	**Collinearity Statistics**
2	CPSA	.015[c]	.484	.628	.018	.972

Interpretation

From the above analysis table of multiple regression, it was found that the R^2 value is .302 (stepwise method), which means that creative problem-solving ability, self-efficacy, and spiritual practices collectively influenced only 30.2% of the variance in educational wellbeing. The remaining 69.8% was contributed by other factors not included in the study.

The regression analysis found that creative problem-solving ability, self-efficacy, and spiritual practices were statistically significant at $p<0.05$ ($p= 0.000$), with $F= 155.343$ for determining educational wellbeing. This indicates that creative problem-solving ability, self-efficacy, and spiritual practices collectively make a significant contribution to predicting educational wellbeing among school-going adolescents.

The above table showed that the t value in this regression model is significant ($p<0.05$), indicating contributors to self–efficacy and spiritual practices with educational wellbeing. Only self-efficacy and spiritual practices are predictors of educational wellbeing among school-going adolescents. Self-efficacy ($\beta=0.382$) and spiritual practices ($\beta=0.313$) both have positive influences as predictors on educational wellbeing. However, creative problem-solving ability is not a significant ($p>0.05$) contributor to educational wellbeing. Therefore, creative problem-solving ability cannot be considered an influential predictor of educational wellbeing and has been excluded.

Hence, it means only self-efficacy and spiritual practices have a combined significant contribution to predicting educational wellbeing among school-going adolescents, but creative problem-solving ability cannot be an influential predictor.

5.1.12. Mediating Effect of the SE in the Relationship between CPSA and EW

$H_0$14: Self-efficacy does not significantly mediate the relationship between creative problem-solving ability and educational wellbeing among school going adolescents

Direct Effect of CPSA on SE

Direct Effect of SE on EW

Direct Effect of CPSA on EW

Mediating Effect of SE in the relationship between CPSA and EW

Table 5.50(a). Mediating Effect of the SE in the Relationship between CPSA and EW

Model (Paths)	Outcome	Predictors	R	R-square	F (*p*)	Coeff	t (*p*)	LLCI	ULCI
Model-1 (Path-a)	SE	CPSA	.167	.028	20.61 (.000)	.167	4.540 (.000)	.086	.218
Model-2 (Path-b)	EW	SE	.459	.210	191.13 (.000)	.459	13.825 (.000)		
In the presence of SE (M)	EW	CPSA	.459	.211	95.62 (.000)	.019	.554 (.580)	-.058	.103
	EW	SE				.455	13.532 .000	.518	.694
Model-3 (Path-C)	EW	CPSA	.095	.009	6.50 (.011)	.095	2.550 (.011)	.026	.203

	Description	Coefficient	t	*p*	LLCI	ULCI
	Total effect of X on Y	.115	2.55	.011	.026	.203
	Direct effect of X on Y	.023	.554	.580	-.058	.103
		effect	Boot SE	Boot LLCI	Boot ULCI	
Path-C'	Indirect effect	.076	.017	.042	.109	

Note: The confidence level for all intervals in the output is 95.0000%.
Number of bootstrap samples used for percentile bootstrap confidence intervals: 5000.

Model Breakdown Results

Model-1 (Path-a): Direct effect of CPSA on SE

Haye's regression analysis results revealed that the loading (i.e., R = .167) between CPSA and SE is .167, the path coefficient is .167, and CPSA is a significant predictor of SE, as evidenced by the significant t-value (4.540) and the p-value (0.000). Additionally, the coefficient (Beta) of .167 indicates a low positive effect of CPSA on SE. The analysis also showed that the R-square value between the two is .028, and the path is significant (F = 20.610 and p = .000), which means that only 2.80% of the variation in self-efficacy is explained by creative problem-solving ability.

Model-2 (Path-b): Direct Effect of SE on EW

To assess SE's direct impact on EW, Haye's regression analysis was conducted separately. The results indicated an R-value of .459 between SE and EW. The path coefficient also is

459, demonstrating a positive influence of SE on EW. Additionally, the R-square value between the two variables is .210, and the path is statistically significant (F= 191.136, p=.000), implying that SE explains 21.0% of the variation in EW.

Model-3 (Path-c): Direct Effect of CPSA on EW

Haye's regression analysis indicates that the R-value between CPSA and EW is .095, with a corresponding coefficient of 0.095. This suggests a positive and statistically significant relationship between EW and CPSA. CPSA serves as a meaningful predictor of EW, evidenced by the t-value of 2.550 and a P-value of .011. However, the model accounts for only .9% of the variance in EW (R^2 = .009), which is statistically significant as shown by the F-value of 6.500 and p< 0.011.

Furthermore, in the presence of SE, the R-value between EW and CPSA is .459, and the path coefficient is .019. The path is significant (F=95.629, p=.000). It also shows that the R-square value is .211, meaning 21.1% of the variation in EW is explained by CPSA when SE is present. However, CPSA does not have a statistically significant impact on EW (t=.554, p=.580). Additionally, the analysis indicates that SE has a significant positive effect on EW (t=13.532, p=.000).

The total effect of CPSA on EW

The total effect of CPSA on EW is the sum of the direct effect and the indirect effect, calculated by adding the path-c with the product of path-a and path-b {i.e., c+(a*b). The coefficient for path-a is .167, for path-b is .459, and for path-c is .095. Therefore, the total effect of CPSA on EW is .171653 (c+a*b). This total effect is significant (t=2.550, p=.011), with a Lower-Level Confidence Interval (LLCI) of .026 and an Upper-Level Confidence Interval (ULCI) of .203.

Model-4 (Path-c'): Indirect effect of CPSA on EW through SE

Table 5.50(b). Mediating Effect of SE in the Relationship between CPSA and EW

Relationship	**Total effect**	**Direct effect**	**Indirect effect**	**Confidence levels**		**Conclusion**
CPSA=>SE=>EW	.1716	.023	.076	LLCI	ULCI	Significant
				.042	.109	

Interpretation

Haye's regression analysis showed that SE mediates the relationship between CPSA and EW, with a confidence interval (LLCI=.042 and ULCI=.109). The indirect effect of SE is meaningful and statistically significant, confirming its role as a mediator in this model.

5.1.13. Mediating Effect of the SP in the Relationship between CPSA and EW

$H_0$15: Spiritual Practices does not significantly mediate the relationship between creative problem-solving ability and educational wellbeing among school going adolescents

Direct Effect of CPSA on SP

Direct Effect of SP on EW

Direct Effect of CPSA on EW

Mediating Effect of SP in the relationship between CPSA and EW

Table 5.51(a). Mediating Effect of the SP in the Relationship between CPSA and EW

Model (Paths)	**Outcome**	**Predictors**	**R**	**R-square**	**F (*p*)**	**Coeff**	**t (*p*)**	**LLCI**	**ULCI**
Model-1 (Path-a)	SP	CPSA	.051	.003	1.887 (.170)	.051	1.374 (.170)	-.024	.137
Model-2 (Path-b)	EW	SP	.406	.165	142.11 (.000)	.406	11.921 (.000)		
In the presence of SP (M)	EW	CPSA	.413	.171		.074	2.176 (.030)	.009	.171
	EW	SP			73.79 (.000)	.403	11.825 (.000)	.370	.517
Model-3 (Path-C)	EW	CPSA	.095	.009	6.500 (.011)	.095	2.550 (.011)	.026	.203

	Description	**Coefficient**	**t**	***p***	**LLCI**	**ULCI**
	Total effect of X on Y	.115	2.550	.011	.026	.203
	Direct effect of X on Y	.090	2.176	.030	.009	.171
		effect	Boot SE	Boot LLCI	Boot ULCI	
Path-c’	Indirect effect	.021	.015	-.009	.050	

Model Breakdown Results

Model-1 (Path-a): Direct effect of CPSA on SP

Haye's regression analysis revealed an R-value of .051 between CPSA and SP. The coefficient of .051 suggests a minimal positive influence of CPSA on SP. However, CPSA is not a significant predictor of SP, as indicated by the non-significant t-value of 1.374 and a p-value of 0.170. Consequently, the analysis demonstrates that CPSA does not have a significant impact on SP.

Model-2 (Path-b): Direct Effect of SP on EW

Haye's regression analysis indicated that the loading (R = .406) between SP and EW is .406. The path coefficient is .406, with SP serving as a significant predictor of EW, supported by a high t-value of 11.921 and a p-value of 0.000. Additionally, the R-square value between them is .165, and the relationship is significant (F=142.109, p=.000), suggesting that only 16.5% of the variation in EW is explained by SP.

Model-3 (Path-c): Direct Effect of CPSA on EW

Haye's regression analysis revealed that the R-value between CPSA and EW is .095, and the coefficient value is also .095. This indicates that CPSA and EW are positively and significantly related. CPSA is a meaningful predictor of EW, as shown by the significant t-value (2.550) and P-value (0.011). The model accounts for 0.9% of the variance in EW (R^2=0.009), which is statistically significant, as evidenced by the F-value (6.500, p<0.011).

Additionally, when SP is present, the R-value between CPSA and EW is .413, and the path coefficient is .090. This path is statistically significant (F=73.792, p=.0000). The R-square value is .171, indicating that 17.1% of the variation in EW is explained by CPSA when SP is included. The analysis demonstrates that CPSA significantly influences EW (t=2.176, p=.030). Furthermore, SP is also a significant predictor of EW, as shown by its highly significant t-value (11.825) and p-value (0.000).

The total effect of CPSA on EW

The total effect of CPSA on EW is the sum of the direct effect and the indirect effect. It is calculated by adding path-c to the product of path-a and path-b {i.e., c+(a*b)}. The coefficient of path-a is 051, path-b is .406, and path-c is .095. Therefore, the total effect of CPSA on EW is 0.1157 (c+a*b). This total effect is significant (t=2.550, p=.011), with the Lower-Level Confidence Interval (LLCI) at .026 and the Upper-Level Confidence Interval (ULCI) at .203.

Model-4 (Path-c'): Indirect effect of CPSA on EW through SP

Table 5.51(b). Represents the Mediating Effect of SP on Relationship between CPSA and EW

Relationship	Total effect	Direct effect	Indirect effect	Confidence levels		Conclusion
CPSA=>SE=>EW	.1157	.090	.021	LLCI	ULCI	
				-.009	.050	Not significant

Interpretation

Haye's regression analysis revealed that SP does not mediate the relation between CPSA and EW, as shown by the confidence interval (LLCI=-.090 and ULCI=.050). The indirect effect of SP is close to zero and lacks statistical significance, indicating that it does not serve as a mediator in this model.

5.1.14. Mediating Effects of the SE and SP in the Relationship between CPSA and EW

$H_0$16: Self-efficacy and spiritual Practices do not significantly mediate the relationship between creative problem-solving ability and educational wellbeing among school going adolescents

Direct Effect of CPSA on SE

Direct Effect of CPSA on SP

Direct Effect of SE on EW

Direct Effect of SP on EW
Direct Effect of CPSA on EW

Mediating Effect of SE and SP in the relationship between CPSA and EW

Table 5.52(a). Mediating Effects of the Self-Efficacy and Spiritual Practices in the Relationship between Creative Problem-Solving Ability and Educational Wellbeing

Model (Paths)	**Outcome**	**Predictors**	**R**	**R-square**	**F (*p*)**	**Coeff**	**t (*p*)**	**LLCI**	**ULCI**
Model-1 (Path-a^1)	SE	CPSA	.167	.028	20.610 (.000)	.167	4.540 (.000)	.086	.218
Model-1 (Path-a^2)	SP	CPSA	.051	.003	1.887 (.170)	.051	1.374 (.170)	-.024	.137
Model 2 (Path b^1)	EW	SE	.459	.210	191.136(.000)	.459	13.825 (.000)		
Model 2 (Path b^2)	EW	SP	.406	.165	142.109(.000)	.406	11.921 (.000)		
In the presence of SE and SP (M)	EW	CPSA	.550	.303	103.52 (.000)	.015	.484 (.628)	-.057	.094
	EW	SE				.379	11.634 (.000)	.420	.590
	EW	SP				.313	9.717 (.000)	.275	.414
Model-3 (Path-C)	EW	CPSA	.095	.009	6.500 (.011)	.095	2.550 (.011)	.026	.203

	Description	**Coefficient**	**t**	***p***	**LLCI**	**ULCI**
	Total effect of X on Y	.115	2.550	.011	.026	.203
	Direct effect of X on Y	.019	.484	.628	-.057	.094
		effect	**Boot SE**	**Boot LLCI**	**Boot ULCI**	
Path-c'1	Indirect Effect	.063	.014	.036	.093	
Path-c'2	Indirect Effect	.016	.011	-.006	.039	
total	Indirect effect	.079	.021	.039	.120	

Model Breakdown Results

Model-1 (Path-a^1): Direct effect of CPSA on SE

Haye's regression analysis revealed an R-value of .167 between CPSA and SE, with a coefficient of .167, indicating a positive relationship. The model accounts for 2.8% of the variance in SE (R^2 = .028), which is statistically significant, as evidenced by the F-value of 20.610 (p = .000). CPSA serves as a significant predictor of SE, confirmed by the notable t-value of 4.540 and a P-value of 0.000.

Model-1 (Path-a^2): Direct effect of CPSA on SP

Haye's regression analysis showed that the R-value between CPSA and SP is .051, with an R^2 of .003. This model accounts for only 0.3% of the variance in SP, which is statistically insignificant, as indicated by the F-value (1.887, p = .170). Additionally, CPSA is not a significant predictor, evidenced by the t-value (1.374) and the P-value (.170).

Model-2 (Path-b^1): Direct Effect of SE on EW

Haye's regression analysis showed that the R-value between EW and SE is 0.459, with a coefficient of 0.459. This indicates a positive and significant relationship between SE and EW. SE is a significant predictor of EW, supported by a high t-value (13.825) and a P-value of 0.000. The model accounts for 21% of the variance in EW (R^2=0.210), which is statistically significant, as shown by the F-value (F=191.136, p=0.000).

Model-2 (Path-b^2): Direct Effect of SP on EW

Haye's regression analysis revealed an R-value of .406 between SP and EW, with an R^2 of .165. This model accounts for only 16.5% of the variance in EW, but it is statistically significant, as shown by the F-value (142.109, p = .000). SP is a key predictor of EW, supported by a significant t-value (11.921) and a P-value of 0.000.

Model-3 (Path-c): Direct Effect of CPSA on EW

Haye's regression analysis showed that the R-value between CPSA and EW is .095. The coefficient of .095 suggests a weak positive influence of CPSA on EW. The R-square value is .009, and the relationship is statistically significant (F= 6.500, p=.011), indicating that only .9% of the variance in EW is explained by CPSA. Additionally, CPSA is a significant predictor of EW, as demonstrated by the significant t-value (2.550) and p-value (.011).

Furthermore, in the presence of SP and SE, the R-value between EW and CPSA is .550, and the path coefficient is .015. The path is significant (F=103.529, p=.000). It also shows that the R-square value is .303, indicating that 30.30% of the variation or change in EW is explained by CPSA when SP and SE are present. The analysis indicates that CPSA does not have a statistically significant impact on EW, as the t-value (.484) and p-value (.628) show. However, SE has a significant positive effect on EW (t=11.634, p=.000). Additionally, the results show that SP has a significant positive effect on EW (t=9.717, p=.000).

The total effect of CPSA on EW

The overall impact of CPSA on EW when SE is present includes both the direct and indirect effects. It is calculated by summing the direct path coefficient (c) with the product

of path-a1 and path-b1, represented as c + (a1 * b1). The coefficients are: a1 = .167, b1 = .459, and c = .095. Consequently, the total effect amounts to approximately 0.172, computed as c + (a1 * b1).

The total impact of CPSA on EW when SP is present combines both the direct and indirect effects. It is calculated by summing the direct effect (path-c) and the product of the indirect effects (path-a2 times path-b2), i.e., c + (a2 * b2). The coefficients are: path-a2 = 0.051, path-b2 = 0.406, and path-c = 0.095. Consequently, the overall effect of CPSA on EW in this context is approximately 0.116, calculated as 0.095 plus the product of 0.051 and 0.406.

The total effect of CPSA on EW, when SP and SE are present, includes both the direct and indirect effects. It is calculated by adding the path-c coefficient to the product of path-a1, path-a2, and path-b1, path-b2, i.e., c + (a1*b1) + (a2*b2). The coefficients are: path-a1 = .167, path-b1 = .459, path-a2 = .051, path-b2 = .406, and path-c = .095. Therefore, the total effect of CPSA on EW in the presence of SP and SE is .0192359. This effect is significant (t=2.550, p=.011), with a Lower-Level Confidence Interval (LLCI) of .026 and an Upper-Level Confidence Interval (ULCI) of .203.

Model-4 (Path-c'): Indirect effect of SE & SP on EW through CPSA

Table 5.52(b). Mediating Effects of SP and SE on Relationship between CPSA and EW

Relationship	**Total effect**	**Direct effect**	**Indirect effect**	**Confidence levels**		**Conclusion**
CPSA=>SE=>EW	0.171653	.019	.063	LLCI	ULCI	Significant
				.036	.093	
CPSA=>SP=>EW	0.115706	.019	.016	-.006	.039	Insignificant
CPSA=>SP &SE=>EW	0.0192359	.019	.079	.039	.120	Significant

Interpretation

Haye's regression analysis demonstrated that SE mediates the relationship between CPSA and EW, with the confidence interval (LLCI=.036 and ULCI=.093) supporting this. The statistically significant indirect effect of SE suggests it functions as a mediator in this model.

Furthermore, the table above shows that SP does not mediate the relationship between CPSA and EW, as indicated by the confidence interval (LLCI= -.006 and ULCI=.039).

The indirect effect of SP is nearly zero and not statistically significant, meaning it does not act as a mediator in this model.

Haye's regression analysis revealed that SE and SP mediate the relationship between CPSA and EW, as indicated by the confidence interval (LLCI= .039, ULCI= 0.120). The indirect effects of SE and SP are statistically significant, suggesting that they act as mediators in this model.

CHAPTER-VI

MAJOR FINDINGS AND CONCLUSION

CHAPTER-VI
MAJOR FINDINGS AND CONCLUSION

6.0. Introduction

The 'major findings and conclusion' section is vital in any research report because it summarises the entire thesis (Murray, 2017). In this chapter, the researcher compares their findings with previous studies to draw conclusions (Evans, Gruba & Zobel, 2011). Having reached this crucial stage, the researcher is guided by the earlier chapters. The chapter is organised into the following headings: significant findings, discussion of key results, educational implications, limitations, and recommendations for future research.

6.1. Major Findings of the Study

6.1.1. Levels of CPSA, EW, SE, and SP among School-going Adolescents

1. Most school-going adolescents have below-average to average levels of CPSA.
2. Most school-going adolescents have average to high levels of EW.
3. Most school-going adolescents have average to high levels of SE.
4. Most school-going adolescents have average to high levels of SP.

6.1.2. Variations in CPSA of School-going Adolescents across Demographics

5. There is a significant difference in CPSA among school-going adolescents with respect to their gender.
6. There is no significant difference in CPSA among school-going adolescents with respect to their family type.
7. There is considerable variation in CPSA among school-going adolescents regarding their number of siblings.
8. There is a notable difference in CPSA among school-going adolescents based on their stream of education

9. There is a notable difference in CPSA among school-going adolescents based on their study hours.
10. There is a notable variation in CPSA among school-going adolescents based on their fathers' educational level.
11. There is no notable variation in CPSA among school-attending adolescents based on their mother's level of education.

6.1.3. Variations in SE among School-going Adolescents across Demographics

12. There is a notable difference in EW among school adolescents based on their gender.
13. There is no notable difference in EW among school-going adolescents based on their family type.
14. There is no notable variation in EW among school-going adolescents based on the number of siblings they have.
15. There is no notable difference in EW among adolescents attending school, regardless of their educational stream.
16. There is a notable difference in EW among school-going adolescents based on their study hours.
17. There is no notable variation in EW among school-going adolescents based on their father's level of education.
18. There is a notable difference in EW among school-going adolescents based on their mothers' educational qualifications.

6.1.4. Variations in SE among School-going Adolescents across Demographics

19. There is no notable difference in SE among school-going adolescents based on their gender.
20. There is a notable difference in SE among school-going adolescents based on their family type.
21. There is a notable difference in SE among school-going adolescents based on their number of siblings.

22. There is a notable difference in SE among school-going adolescents based on their stream of education.

23. There is a notable difference in SE among school-going adolescents depending on their study hours.

24. There is a notable difference in SE among school-going adolescents based on their father's educational qualification.

25. There is a notable difference in SE among school-going adolescents based on their mothers' educational qualifications.

6.1.5. Variations in SP among School-going Adolescents across Demographics

26. There is a notable difference in SP among school-going adolescents based on their gender.

27. There is no significant difference in SP among school-going adolescents concerning their family type.

28. There is no notable difference in SP among school-going adolescents regarding the number of siblings.

29. There is no notable variation in SP among school-going adolescents based on their chosen educational stream.

30. There is a notable difference in SP among school-going adolescents based on their study hours.

31. There is no notable difference in SP among school-going adolescents based on their father's level of education.

32. There is a significant difference in SP among school-going adolescents with respect to their mothers' educational qualifications.

6.1.6. The Patterns of Relationship among CPSA, EW, SE, and SP

33. CPSA and EW of the school-going adolescents are positively and significantly correlated.
34. CPSA and SE of the school-going adolescents are positively and significantly correlated.
35. CPSA and SP of the school-going adolescents are not significantly correlated.

36. EW and SE of the school-going adolescents are moderately and significantly correlated.
37. EW and SP of the school-going adolescents are moderately and significantly correlated.
38. SE and SP of the school-going adolescents are positively and significantly correlated.

6.1.7. Effects of SE and SP on CPSA among School-going Adolescents

39. SE has a notable impact on CPSA among adolescents attending school.
40. SP has no notable impact on CPSA in school-aged adolescents.
41. SE has a notable impact on CPSA among school-going adolescents, but SP is not included.

6.1.8. Effects of SE and SP on EW among School-going Adolescents

42. There is a notable influence of SE on EW among school-going adolescents.
43. There is a notable impact of SP on EW among adolescents attending school.
44. There is a notable combined influence of SE and SP on EW among adolescents in school.

6.1.9. Effect of CPSA on EW among School-going Adolescents

45. CPSA has a small but meaningful impact on EW in adolescents who are still in school.

6.1.10. Combined Effects of SE, SP and CPSA on EW among School-going Adolescents

46. A notable combined effect of SE and SP on EW exists among school-going adolescents, although CPSA is excluded.

6.1.11. Mediating Effect of SE in the Relationship between CPSA and EW among School-going Adolescents

47. SE significantly mediates the relationship between CPSA and EW among school-going adolescents.

6.1.12. Mediating Effect of SP in the Relationship between CPSA and EW among School-going Adolescents

48. SP does not significantly mediate the relationship between CPSA and EW among school-going adolescents.

6.1.13. Combined Mediating Effects of SE and SP in the Relationship between CPSA and EW among School-going Adolescents

49. There is a significant combined mediating effect of SE and SP on the relationship between CPSA and EW among school-going adolescents.

6.2. Discussion of the Major Findings

This study aimed to compare CPSA, SE, SP, and EW across different demographic factors such as gender, family type, number of siblings, education stream, study hours, and parents' educational qualifications. It also assessed the individual and combined effects of SE and SP on CPSA and EW. Additionally, the study examined the mediating roles of SE and SP, individually and jointly, in the relationship between CPSA and EW. The significant findings are discussed in the following sections.

Variations in CPSA

The results of the demographic analyses revealed that creative CPSA among school-going adolescents varied significantly by gender, number of siblings, educational stream, study hours, and father's educational qualification. However, there were no significant variations in family type or the mother's educational qualifications. The significant gender difference in CPSA is consistent with earlier studies (He, 2021; Murtafiah, 2023; Molita & Masriyah, 2023; Rakesh & Geetha, 2016); however, some contradictions also exist (Ulusoy et al., 2025; Nada & Sari, 2022). The significant variation in CPSA regarding the number of siblings aligns with evidence that sibling constellation is associated with higher divergent thinking scores and creative performance (Abdulla Alabbasi, 2021; Rawlings et al., 2025). Although no studies support or contradict the finding of significant differences across streams of education and study hours, these findings suggest that both streams of education and study habits are important educational factors for CPSA development. The pattern that father's educational qualification is significantly associated with adolescents' CPSA resonates with broader evidence that parental education is positively linked to children's cognitive outcomes, though the relative contribution of mothers' versus fathers' education varies by context and outcome, with some studies reporting more substantial effects for fathers' education on academic performance and others highlighting more enduring effects of mothers' education on cognitive development (Cermakova et al., 2023; Wang, 2020). The family-type results suggest no significant differences in CPSA across family configurations (e.g., nuclear vs. joint). It may be less critical for creative cognition than the quality of family processes;

this aligns with research showing that family structure primarily affects parent-child communication and engagement in learning rather than specific cognitive skills like creativity (Cai, 2023; Ledovskaya, 2021).

Variations in Educational Wellbeing

The results related to EW variations by demographics indicate that EW among school-going adolescents varies significantly by gender, study hours, and maternal education. However, no significant variations were found concerning family type, number of siblings, stream of education, and fathers' educational qualifications. The finding of a significant gender difference in EW, with girls' performance better than boys', is consistent with that of Yoon et al. (2022). That indicates girls often experience school climate, academic stress, and engagement differently, which can differentially influence wellbeing (DePrékel et al., 2024; Vastamäki et al., 2014). The finding that EW varies significantly with study hours aligns with work showing that moderate, self-regulated study time is positively related to academic satisfaction and school-related wellbeing. In contrast, both under-engagement and excessive, stress-driven study may undermine students' perceived quality of school life (Salmela-Aro & Upadyaya, 2014). The result that mothers' but not fathers' educational qualification is significantly associated with adolescents' EW reflects evidence that maternal education often plays a particularly prominent role in shaping the home learning environment, expectations, and emotional support, which in turn foster academic engagement and positive school-related affect (Bornstein et al., 2010; Pieters et al., 2019).

Simultaneously, the absence of differences in EW among different family types and sibling numbers indicates that household structural features might play a lesser role in students' perceived EW (Danielsen et al., 2009). Overall, these findings emphasise that adolescents' EW are more strongly related to gendered schooling experiences, effective use of study time, and maternal educational resources than to broader family structure or paternal education alone.

Variations in Self-efficacy

While the SE of school-going adolescents was a concern, the findings show that, except for gender, SE among these adolescents varied significantly by family type, number of siblings, educational stream, study hours, and both parents' educational qualifications. Some recent studies also reported no significant gender differences in SE (Ghorai &

Mohakud, 2024; Salavera et al., 2017), while several studies found comparable levels of general or academic SE among adolescent boys and girls when schooling conditions are similar (Sawari & Mansor, 2013; Shkullaku, 2013). The present finding regarding significant variations in SE concerning family type and number of siblings aligns with evidence that family structure and sibling constellation (e.g., nuclear vs. joint families, birth order) shape opportunities for autonomy, responsibility, and social modelling, which in turn influence youths' perceived competence and SE (Bhatt, 2020; Krejčová, 2019; McHale et al., 2012). Likewise, differences in SE concerning study hours are consistent with research showing that learning contexts and time-management practices are closely linked to academic SE, with more mastery-oriented environments and effective study routines fostering stronger efficacy beliefs (Akomolafe et al., 2013; Daradkeh, 2025; Sawhney, 2019). The significant variations in SE of school-going adolescents concerning their fathers' and mothers' educational qualifications support evidence that higher parental education and expectations are transmitted through cognitively stimulating, supportive, and structured parenting, which enhances adolescents' SE and engagement (Yin et al., 2025; Zhang et al., 2024). Overall, these patterns underscore that adolescents' SE is more a function of the quality and resources of their family and learning environments than of gender alone.

Variations in Spiritual Practices

While 'SP' was the concern, the findings reveal that SP among school-going adolescents differ significantly by gender, study hours, and mothers' educational qualification. On the other hand, no significant variation was observed for family type, number of siblings, stream of education, or fathers' educational qualifications.

The gender-based variation in SP aligns with research consistently reporting higher spirituality, religious engagement, and devotional behaviours among adolescent girls compared to boys, suggesting gender-linked differences in value orientation and emotional-spiritual expressiveness (Lee et al., 2018; Mirković et al., 2021; Walker & Dixon, 2024). The influence of mothers' educational qualification is consistent with studies highlighting the mother as the primary socialising agent in transmitting spiritual values within the household, where maternal education enhances religious communication, moral guidance, and supportive family interaction that foster adolescent spirituality (Desrosiers et al., 2011; Halgunseth et al., 2015). On the other hand, no significant differences in SP across family type, number of siblings and stream of

education support earlier findings that family configuration alone has a limited influence on adolescent religiosity when parental attitudes and modelling are considered (Denton & Pearce, 2012; McClendon, 2011). Thus, SP appear to be shaped more by gendered socialisation, personal study behaviour, and maternal educational influence.

Relationship Patterns among CPSA, EW, SE and SP

When the focus was on exploring the relationship patterns among CPSA, EW, SE and SP, the findings of the present study reveal a nuanced interplay among these variables. The current study found a low but positive and significant correlation between CPSA and EW, indicating that adolescents with better problem-solving skills tend to have higher EW. The evidence is consistent with the idea that creative thinking, or creativity, is associated with better academic adaptation and positive educational outcomes among adolescents (Moreno, 2023). The very low but significant positive relationship between CPSA and SE aligns with research arguing that creative SE correlates positively with general psychological wellbeing and motivational resources in school contexts (Kashanian & Sheikhpour, 2024). Conversely, the very low, positive yet non-significant correlation between CPSA and SP suggests that, based on this study's measurements, spiritual engagement does not seem to enhance creative problem-solving ability in adolescents. The moderate and significant positive correlations between EW and both SE and SP are more robust. It aligns with prior studies showing that SE is strongly related to psychological wellbeing and educational adjustment in adolescents (Raimondi et al., 2025). Further, the positively and significantly correlation between SE and SP indicated that SP in adolescence increases SE.

Effects of SE and SP on CPSA

When the researcher focused on the effects of SE and SP, one key finding of the present study was that SE significantly accounts for 21% of the variation in CPSA among school-going adolescents. This means that adolescents with higher SE are more likely to attempt challenging tasks, persist when solutions are not obvious, and experiment with alternative strategies rather than giving up, all of which are central to creative problem-solving. It aligns with social-cognitive theory, which suggests that SE influences the goals individuals set, the effort they put forth, and their perseverance in the face of challenges (Bandura, 1997, 2012). Previous studies show that creative SE correlates positively with creative performance and problem-solving among students, implying that confidence in

one's creative abilities predicts the likelihood of producing innovative and practical ideas (Tierney & Farmer, 2011; Karwowski, 2014). Furthermore, SE makes a significant contribution to CPSA among school-going adolescents. At the same time, SPs are excluded from the model, indicating that SPs do not have a significant effect on CPSA in this group. Engaging in prayer, worship, or other spiritual activities is not directly linked to students' capacity to generate novel and practical solutions to problems. This is consistent with research indicating that spirituality and religiosity are more strongly associated with emotional and mental health outcomes—such as lower anxiety and depressive symptoms, greater life satisfaction, and overall wellbeing—than with specific cognitive skills like divergent thinking or creativity (Koenig, 2012; Yonker et al., 2012). Although some authors have argued that spiritual or meaning-making orientations may indirectly support creativity by fostering openness, reflection, or resilience (Korůžná & Šram, 2014), empirical findings regarding a direct connection between spirituality and creativity are mixed and often weak.

Effects of SE and SP on EW

The present study revealed that SE significantly influences EW among school-going adolescents. It means that how strongly students believe in their own capability to manage academic tasks is a key predictor of how positively they experience school. Adolescents with higher self-efficacy tend to approach schoolwork confidently, set challenging goals, persist despite difficulties, and see setbacks as manageable rather than as personal failures. This attitude boosts their satisfaction, engagement, and emotional comfort within the educational environment (Bandura, 1997; Caprara et al., 2008). Research grounded in the demands-resources framework also shows that academic SE functions as an important personal resource that buffers stress and supports higher school engagement and lower school burnout, both central components of EW (Salmela-Aro & Upadyaya, 2014). On the other hand, the finding that SP significantly influences EW among school-going adolescents suggests that students' engagement in prayer, meditation, religious rituals, or other spiritual activities contributes meaningfully to their positive school experience. Spiritually engaged adolescents may derive a stronger sense of meaning, hope, and inner stability, which can buffer academic stress and enhance their EW. Evidence supports that spirituality is positively linked to both life satisfaction and quality of life (Alorani & Alradaydeh, 2018; Leung & Pong, 2021). Systematic reviews also report that students' spirituality is generally linked to better overall wellbeing and school-related adjustment

(Klokočka et al., 2025; Ratliff, 2005). More recent work shows that spirituality and SP can act as protective factors, promoting mental health and subjective wellbeing among young people, which likely translates into more positive perceptions of and engagement with schooling (Aggarwal et al., 2023; Pavelea & Culic, 2023).

Similarly, SP has been shown to contribute to adolescents' wellbeing, mental health, and sense of purpose, buffering stress and fostering emotional balance (Aggarwal et al., 2023). The presence of a significant positive correlation between SE and SP, though low, further suggests that spirituality may reinforce adolescents' sense of self-efficacy, possibly by providing meaning, hope, and psychological support (Halder, 2024).

Furthermore, the other finding that SE and SP jointly contribute significantly to EW among school-going adolescents highlights the importance of both psychological and spiritual resources for students' positive school experiences. Adolescents who believe in their academic abilities and regularly engage in SP are more likely to feel motivated, resilient, and supported when facing academic challenges, which, in turn, increases satisfaction, engagement, and emotional comfort within the school environment. This aligns with research showing that SE is a strong predictor of academic adjustment, school engagement, and overall wellbeing in young people (Caprara et al., 2008; Salmela-Aro & Upadyaya, 2014), and that spiritual or religious involvement is positively linked to life satisfaction, mental health, and positive functioning among adolescents and students (Yonker et al., 2012; Alorani & Alradaydeh, 2018). Overall, these findings support a holistic model of EW in which confidence in one's abilities (SE) and a sense of meaning, hope, and inner support (SP) work together to foster a more positive school experience, rather than acting as separate influences.

Effects of CPSA, SE, and SP on EW

Another finding of the present study is that CPSA individually significantly influences EW among school-going adolescents. It means students' capacity to generate flexible solutions, think divergently, and adaptively cope with academic demands is an important predictor of how positively they experience school. This result aligns with the findings of Liu et al. (2025) and Fuente et al. (2023). In particular, the role of SE is also well supported, as SE beliefs are strongly linked to adolescents' academic adjustment, engagement, and wellbeing (Pedditzi et al., 2023; Kashanian & Sheikhpour, 2024; Valentina et al., 2022). SP has also been shown to positively influence EW (Salesi et al.,

2024; Ryff, 2021; Supriatna & Septian, 2021). When combined, these dimensions likely offer complementary pathways to EW. Thus, the collective effect underscores the value of a holistic, multidimensional approach if educational institutions aim to foster students' wellbeing—one that cultivates not just academic skills but also creative thinking, self-belief, and spiritual or value-based support. Moreover, the finding that SE and SP together make a significant combined contribution to EW, while CPSA is excluded from the model, suggests that motivational belief factors and spiritual resources are more central to how adolescents experience school than their cognitive creativity per se. SE is well-established as a key predictor of academic engagement, persistence, and satisfaction; adolescents who believe in their ability to handle school tasks tend to report higher school-related wellbeing (Caprara et al., 2008; Salmela-Aro & Upadyaya, 2014). At the same time, SP appears to provide an additional layer of support by offering meaning, hope, and emotional stability, which are linked to higher life satisfaction and better adjustment among students (Alorani & Alradaydeh, 2018; Yonker, Schnabelrauch, & DeHaan, 2012). The statistical exclusion of CPSA indicates that, once SE and spirituality are accounted for, creativity does not explain additional variance in EW, consistent with evidence that creativity relates more modestly and indirectly to wellbeing than do strong, proximal predictors such as self-beliefs and spiritual/psychosocial resources. The findings imply that among school-going adolescents, SE and SP (Kurtulus et al., 2022) contribute substantially to EW. Earlier studies note that SE strengthens motivation, achievement, and adaptive coping (Bandura, 2012; Usher & Pajares, 2019), while spirituality contributes to emotional balance, meaning-making, and positive subjective functioning (King & Boyatzis, 2015; Yonker et al., 2012). However, creative problem-solving extends beyond these internal resources, requiring learning environments that actively promote divergent thinking, inquiry-based exploration, and open-ended intellectual challenge (Runco & Acar, 2012).

Mediating Effect of SE between CPSA and EW

The finding that SE significantly mediates the relationship between CPSA and EW among school-going adolescents indicates that adolescents with higher CPSA are likely to feel more capable, resourceful, and effective in dealing with academic challenges, which, in turn, translates into greater satisfaction, engagement, and positive feelings about school. This aligns with Bandura's (1997, 2012) social-cognitive theory. Empirical studies similarly show that SE acts as a mediator between cognitive or personal resources and

wellbeing outcomes (Liu, Wu, Meng, & Dang, 2025; Caprara et al., 2008; Raimondi et al., 2025).

Mediating effect of SP between CPSA and EW

The finding that SP do not significantly mediate the relationship between CPSA and EW among school-going adolescents indicates that spirituality, in this sample, does not serve as the primary psychological pathway through which creativity translates into positive educational experiences. Although spiritual engagement is often associated with adolescents' overall life satisfaction, emotional stability, and mental health (Yonker, Schnabelrauch, & DeHaan, 2012; Alorani & Alradaydeh, 2018), empirical evidence regarding a direct spirituality-creativity connection is mixed and generally modest (Korůžná & Šram, 2014).

Mediating effects of SE and SP between CPSA and EW

The finding that SE and SP together significantly mediate the relationship between CPSA and EW among school-going adolescents indicates that adolescents with higher CPSA are more likely to experience frequent mastery experiences and successfully cope with academic challenges when their SE is high and they are engaged in SP (Yonker et al., 2012; Alorani & Alradaydeh, 2018). This dual-mediation result thus supports a multi-pathway model in which creativity enhances EW indirectly through SE and SP, highlighting the importance of integrating creativity training, efficacy-building strategies, and spiritually sensitive or values-based support in school interventions.

6.2. Educational Implications of the Study

The current study has significant implications for education and other related fields. The findings of the study offer several educational implications:

1. Schools should implement differentiated and activity-based teaching methods (such as problem-based, inquiry-based, and experiential learning) to improve students' creative problem-solving ability.

2. Institutions should foster supportive, wellbeing focused school environments that are sensitive to differences in gender, study habits, and maternal educational background to enhance educational wellbeing.

3. Teacher professional development programs should emphasise confidence-building and skill-based teaching strategies to enhance students' self-efficacy and problem-solving skills.
4. Schools might incorporate reflective, mindfulness-based, and values-oriented activities to enhance spiritual practices as additional support for students' wellbeing.
5. Curriculum and co-curricular activities should be designed in an integrated way to develop cognitive skills, motivational beliefs, and wellbeing concurrently.
6. Since self-efficacy significantly influences both creative problem-solving abilities and educational wellbeing, schools should prioritise self-efficacy enhancement strategies such as goal-setting, positive feedback, and mastery learning.
7. Teachers should promote structured study habits and time management skills, as study hours are associated with both creative problem-solving abilities and educational wellbeing.
8. Since self-efficacy mediates the relationship between creative problem-solving abilities and educational wellbeing, classroom practices should aim to build confidence while encouraging students to participate in creative problem-solving tasks.
9. Spiritual practices should be regarded as a supportive wellbeing resource rather than a direct academic intervention for problem-solving outcomes.

6.4. Limitations of the Study

The main limitations of the study are as follows:

1. The study could not include all districts of West Bengal due to practical constraints of time, accessibility, and resources.
2. The findings of the study may vary if a different sample size or sampling procedure were adopted.
3. The study did not cover the entire age range of adolescence, which may limit the broader applicability of the results.

4. The limited sample size and inadequate representation from all school boards and districts of West Bengal restrict the generalizability of the findings.
5. Although the study considered key demographic variables such as gender, family type, number of siblings, educational stream, study hours, and parents' educational qualifications, other unexamined factors may also have influenced students' CPSA, EW, SE, and SP.
6. While measuring creative problem-solving ability (CPSA), students differed in the time taken to complete the tasks; however, this variation was not controlled in the study and may have influenced the results.

6.5. Suggestions for Further Study

Several areas require attention to build on this research's findings and enhance the robustness of future studies.

1. Future studies could include a more diverse and representative sample of school-going adolescents from different school boards (i.e., CBSE, ICSE, ISC, and other regional boards) and various geographical regions of West Bengal, India.

2. Future research should gather a larger, more balanced sample from rural, semi-urban, and urban areas in West Bengal to improve the generalisability of the findings across different contexts.

3. Other standardised tools or alternative assessment instruments may be used to measure SE, SP, CPSA, and EW.

4. Further research could explore additional demographic variables that might affect SE, SP, CPSA, and EW.

5. Interventional studies could provide deeper insights into how demographic factors influence these psychological and educational constructs over time, as well as a better understanding of SE, SP, CPSA, and EW.

6. Consequently, educational programs and school policies could benefit from incorporating developmentally focused interventions: life-skills training (to increase SE), creative thinking/problem-solving modules (to strengthen

cognitive resources), and mindfulness or spiritual-wellness components (to promote emotional and existential wellbeing). Such a combined intervention might be more effective in improving students' EW than strategies with a single focus.

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Appendices

Appendix-A

Consent Form

Investigator's Name:	Bikash Chandra Ghorai
Department:	Education
Institution:	Jadavpur University
Phone:	8348733222
Email ID:	bikashchandraghorai@gmail.com
Supervisor's Name:	Dr. Lalit Lalitav Mohakud

I am currently conducting a study on **Creative Problem-Solving Ability and Educational Wellbeing among School-going Adolescents: The Mediating Effects of Self-Efficacy and Spiritual Practices**. To collect data for this study, I am conducting a survey. This tool consists of five parts: the first part deals with Demographic Profile Sheet; the second part includes Self-Efficacy Scale; the third section includes Spiritual Practices scale; the fourth section includes Educational Wellbeing Scale; and the fifth Section includes Creative Problem-Solving Test. Each item of tools will be scored for analysis. To make sure that your responses are kept confidential, I will create a number coding system for each participant. Any information obtained in connection with this study and which could be identified with the subjects will only be used by the researcher named above, along with his guide, and will be kept strictly confidential. I welcome questions about the study at any time. Your participation in this study is voluntary, and you may refuse to participate at any time. Data shall be used only for the researcher's Ph.D. work, and this data will be available till the end of the study and related publications.

I am declaring that I read and understand the contents of this Consent Form and that I agree to take part in this study.

Signing your name below indicates that you have read and understand the contents of this consent form and that you agree to take part in this study.

Participant's Signature Date

Investigator's Signature Date

Appendix-B

Demographic Profile Sheet

প্রিয় ভাই/বোন,

আমি বিকাশ চন্দ্র ঘোড়ই, যাদবপুর বিশ্ববিদ্যালয়-এর শিক্ষা বিজ্ঞান বিভাগ থেকে Ph.D. করছি। আমার তত্ত্বাবধায়ক হলেন ডঃ ললিত ললিতাভ মহাকুড, সহযোগী অধ্যাপক, শিক্ষা বিজ্ঞান বিভাগ, যাদবপুর বিশ্ববিদ্যালয়। আমার গবেষণার বিষয়বস্তু হল "**Creative Problem-Solving Ability and Educational Wellbeing among School-going Adolescents: The Mediating Effects of Self-Efficacy and Spiritual Practices**"। এই বিষয়ে তথ্য সংগ্রহ করার জন্য পাঁচটি পরিমাপনী যথা ১) Demographic Profile Sheet; ২) Self Efficacy Scale; ৩) Spiritual Practices Scale; ৪) Educational Wellbeing Scale; ও ৫) Creative Problem-Solving Ability Test তুলে ধরা হয়েছে। প্রতিটি পরিমাপনী মনোযোগ সহকারে পড়ো এবং যথাযথ উত্তর দাও। তোমার তথ্য সম্পূর্ণ গোপন থাকবে, কেবলমাত্র গবেষণার কাজে তথ্যগুলি ব্যবহার করা হবে।

Demographic Profile Sheet

<table>
<tr><td colspan="4">নিম্নলিখিত কিছু তথ্য যা শিক্ষার্থীর ব্যক্তিগত তথ্যের সাথে সম্পর্কিত। প্রতিটি বিষয়বস্তু মনোযোগ সহকারে পড়ো এবং শুধুমাত্র সেই বিকল্পটিতে টিক ☑ চিহ্ন দাও বা লেখো যা তোমার ক্ষেত্রে সবচেয়ে উপযুক্ত এবং সত্য বলে মনে হবে।</td></tr>
<tr><td colspan="4">শিক্ষার্থীর ক্লাস রোল নাম্বার-</td></tr>
<tr><td colspan="2">লিঙ্গ- ছাত্র/ ছাত্রী / অন্যান্য</td><td colspan="2">বয়স-</td><td>শ্রেণী- একাদশ/দ্বাদশ</td></tr>
<tr><td colspan="2">পরিবারের ধরণ- একান্নবর্তী/ ক্ষুদ্র</td><td colspan="3">বিভাগ - কলা / বিজ্ঞান/ বাণিজ্য</td></tr>
<tr><td colspan="2">শিক্ষার্থীর ভাই বোনের সংখ্যা-</td><td colspan="3">শিক্ষার্থী / শিক্ষার্থীর একজন ভাই বোন আছে/ শিক্ষার্থীর দুইজন ভাই বোন আছে / শিক্ষার্থীর তিনজন ও তার বেশি ভাই বোন আছে</td></tr>
<tr><td colspan="2">শিক্ষার্থীর দিনে পড়াশুনার সময়-</td><td colspan="3">দুই ঘণ্টা পর্যন্ত/ তিন থেকে পাঁচ ঘণ্টা/ ছয় থেকে আট ঘণ্টা/ নয় ঘণ্টা ও তার বেশি সময়</td></tr>
<tr><td>বাবার শিক্ষা-</td><td colspan="4">অষ্টম শ্রেণী পর্যন্ত/ নবম-দশম শ্রেণী/ একাদশ-দ্বাদশ শ্রেণী/ দ্বাদশ শ্রেণীর বেশী</td></tr>
<tr><td>মায়ের শিক্ষা-</td><td colspan="4">অষ্টম শ্রেণী পর্যন্ত/ নবম-দশম শ্রেণী/ একাদশ-দ্বাদশ শ্রেণী/ দ্বাদশ শ্রেণীর বেশী</td></tr>
</table>

Appendix-C

Self- Efficacy Scale

এই পরিমাপনীতে স্ব-কার্যকারিতা সম্বন্ধীয় 20 টি উক্তি তুলে ধরা হয়েছে। প্রতিটি উক্তি মনোযোগ সহকারে পড়ো এবং দেখো প্রতিটি উক্তির পাঁচটি করে বিকল্প দেওয়া হয়েছে। বিকল্পগুলির মধ্যে যেটি সব থেকে বেশি তোমার উপযুক্ত বলে মনে হবে তাতে তুমি টিক ☑ চিহ্ন দাও।

ক্রম নং	উক্তি	সম্পূর্ণ সহমত	সহমত	নিরপেক্ষ	অসহমত	সম্পূর্ণ অসহমত
১	নিজের সামর্থ্য সম্পর্কে আমার বিশ্বাস আছে সামান্য প্রচেষ্টা করে কঠিন সমস্যা গুলি সমাধান করতে পারবো।					
২	আমি সুনিশ্চিত যে নিজের জন্য নির্ধারিত সমস্ত লক্ষ্য অর্জন করতে পারবো।					
৩	আমি আমার ক্ষমতা সম্পর্কে এতটাই আত্মবিশ্বাসী যে সময়মতো কাজ শেষ করতে পারবো।					
৪	কঠোর পরিশ্রম করা সত্ত্বেও আমার মনে হয় আমি সফল হতে পারবো না।					
৫	আমি মনে করি যে কঠিন সময়ে নিজেকে নিয়ন্ত্রিত করতে পারবো।					
৬	যেকোনো পরিস্থিতিতে আমি যা চাই তা অর্জন করতে পারবো।					
৭	আমার যে কোন কাজ শেষ করার মত যথেষ্ট আত্মবিশ্বাস আছে।					
৮	নিজের চেষ্টায় আমি যে কোনো কিছু অর্জন করতে পারি।					
৯	আমার সমস্ত কৃতিত্ব নিজের সম্ভাবনা এবং ক্ষমতার ফল।					
১০	সাধারণত আমার পক্ষে কোনো লক্ষ্য অর্জন করা সম্ভব নয়।					
১১	আমি খুব কঠিন সময়েও নিজের ভারসাম্য বজায় রাখতে সক্ষম।					
১২	আমি কোন সাহায্য এবং সহায়তা ছাড়া সমস্যার মুখোমুখি হতে পারি না।					
১৩	অনেক কঠিন পরিস্থিতির সমাধান এবং মোকাবিলা করার কৌশল তৈরি করতে পারি।					

১৪	আমি লক্ষ্য অর্জনের জন্য আমার সর্বোচ্চ চেষ্টা করি।					
১৫	অন্যরা আমার সঙ্গে লড়াইয়ের চেষ্টা করলেও আমি নিজেকে শান্ত রাখতে পারি।					
১৬	যদি আমি কোন কাজে বাধা পাই খুব সামান্য চেষ্টা করেই তার সমাধান করতে পারি।					
১৭	যদি আন্তরিকভাবে চেষ্টা করি আমি নিশ্চিত সফল হতে পারবো।					
১৮	কাঙ্ক্ষিত লক্ষ্যে মনোনিবেশ সত্ত্বেও আমি তা পেতে ব্যর্থ হব।					
১৯	যদি সফল হতে দৃঢ় প্রতিজ্ঞাবদ্ধ হই আমি সাফল্য অর্জন করতে পারবো।					
২০	যদি পরিকল্পনা অনুসারে কাজ করি আমি দ্রুত ফলাফল পাবো।					

Appendix-D

Spiritual Practices Scale

এই পরিমাপনীতে আধ্যাত্মিক অনুশীলন সম্বন্ধীয় 28 টি উক্তি তুলে ধরা হয়েছে। প্রতিটি উক্তি মনোযোগ সহকারে পড়ো এবং দেখো প্রতিটি উক্তির চারটি করে বিকল্প দেওয়া হয়েছে। বিকল্পগুলির মধ্যে যেটি সব থেকে বেশি তোমার উপযুক্ত বলে মনে হবে তাতে তুমি টিক ☑ চিহ্ন দাও।

ক্রম নং	উক্তি	**কখনই না**	**কদাচিৎ**	**প্রায়শই**	**নিয়মিত**
1.	আমি একান্তে নিজের বা অন্যদের জন্য প্রার্থনা করি।				
2.	আমি মন্দির/গির্জা/মসজিদ/ গুরুদুয়ার যাই।				
3.	আমি অন্য মানুষের জন্য চেষ্টা করে থাকি।				
4.	আমি প্রাচ্য বা পাশ্চাত্য শৈলীতে ধ্যান অভ্যাস করি ।				
5.	আমি বিশেষ পবিত্র গ্রন্থ আবৃত্তি করি।				
6.	আমি ধর্মীয়/আধ্যাত্মিক বই পড়ি।				
7.	আমি শরীর-মনের শৃঙ্খলা প্রতিষ্ঠার জন্য অভ্যাস করি (যেমন, যোগ, চিগং, মননশীলতা ইত্যাদি) ।				
8.	আমি অন্যান্য ধর্মের আচার আচার-অনুষ্ঠান গুলিও পালন করি।				
9.	আমি প্রকৃতির সাথে একাত্ম বোধ করি।				
10.	আমি জীবনের অর্থ সম্পর্কে চিন্তা করি।				
11.	আমি নিজের মধ্যেও অন্তর্দৃষ্টি পেতে চেষ্টা করি।				
12.	আমি আমার আত্ম-উপলব্ধির জন্য কাজ করি।				
13.	আমি আমার আধ্যাত্মিক বিকাশের জন্য কাজ করি।				
14.	আমি চেতনার উচ্চতর স্তর অর্জন করার চেষ্টা করি।				
15.	আমার একান্তের জায়গায় ধর্মীয় প্রতীকগুলি আমার কাছে গুরুত্বপূর্ণ।				
16.	আমি ধর্মীয় অনুষ্ঠানে অংশগ্রহণ করি (যেমন, ধর্মীয় সমাবেশ ইত্যাদি) ।				
17.	আমি অন্যদের সাহায্য করি।				
18.	আমি অন্যের প্রয়োজনীয়তাকে বিবেচনা করি।				
19.	যাদের সাহায্যের প্রয়োজন রয়েছে তাদের নিয়ে আমি ভাবি।				

20.	আমি ভালো কাজ করি।				
21.	আমি অন্যদের সাথে একাত্মবোধ করি।				
22.	আমার মধ্যে গভীর কৃতজ্ঞতার প্রতি অনুভূতি আছে।				
23.	আমার মধ্যে বিস্ময়পূর্ণ শ্রদ্ধার অনুভূতি আছে।				
24.	আমি সৌন্দর্য অনুভব করতে এবং তার মূল্য দিতে শিখেছি।				

Appendix-E

Educational Wellbeing Scale

এই পরিমাপনীতে শিক্ষার্থীর শিক্ষামূলক ভালো থাকা সম্বন্ধীয় ২৮ টি উক্তি তুলে ধরা হয়েছে। প্রতিটি উক্তি মনোযোগ সহকারে পড়ো এবং দেখো প্রতিটি উক্তির পাঁচটি করে বিকল্প দেওয়া হয়েছে। বিকল্পগুলির মধ্যে যেটি সব থেকে বেশি তোমার উপযুক্ত বলে মনে হবে তাতে তুমি টিক ☑ চিহ্ন দাও।

ক্রম নং	উক্তি	সম্পূর্ণ সহমত	সহমত	নিরপেক্ষ	অসহমত	সম্পূর্ণ অসহমত
1.	আমি শিক্ষাগতভাবে আমার শিক্ষকদের দ্বারা উৎসাহিত বোধ করি।					
2.	আমি শ্রেণীকক্ষে আলোচনায় সক্রিয়ভাবে অংশগ্রহণ করতে উৎসাহিত হই।					
3.	আমার পাঠ্যক্রমের অন্তর্ভুক্ত বিষয়গুলি শিখতে আমি উপভোগ করি।					
4.	আমি সহপাঠ্যক্রমিক কার্যকলাপে আনন্দের সঙ্গে অংশগ্রহণ করি।					
5.	আমি আমার পড়াশুনা নিয়ে খুব বেশি চাপ বোধ করি না।					
6.	আমি আমার পড়াশুনা, বাড়ির কাজ এবং খেলাধুলোর সঙ্গে সামঞ্জস্য বজায় রাখতে পারি।					
7.	আমি পরীক্ষার ফলাফল নিয়ে অতিরিক্ত চিন্তা না করে শেখার আনন্দ উপভোগ করি।					
8.	আমি মনে করি আমার শিক্ষা প্রতিষ্ঠান নিরাপদ এবং সহায়ক।					
9.	আমি শিক্ষাক্ষেত্রে আমার ধারণা এবং মতামতগুলি প্রকাশ করতে পারি।					
10.	আমি আমার শিক্ষাপ্রতিষ্ঠানে একাকীত্ব অনুভব করি না।					
11.	আমি প্রথাগত পড়াশুনার বাইরেও বিভিন্ন বিষয়ের শিখন উপভোগ করি।					
12.	আমি শিক্ষাপ্রতিষ্ঠানের দলগত প্রকল্পগুলিতে আমার জ্ঞান প্রয়োগের সুযোগকে উপভোগ করি।					

13.	আমি বিভিন্ন ধরণের বিষয় শেখার সুযোগ অন্বেষণ করতে আগ্রহী বোধ করি।					
14.	আমি পড়ার সময় নতুন ধারণাগুলিকে সহজেই বুঝতে পারি।					
15.	আমি পরীক্ষার জন্য ভালো ভাবে প্রস্তুত থাকি।					
16.	আমি যে কোনো শিক্ষাগত বাধাকে মোকাবিলা করতে প্রস্তুত থাকি।					
17.	আমি পড়াশুনায় প্রয়োজনীয় শিখন সম্পদ বা শিখন সহায়ক উপকরণ নির্বিঘ্নে ব্যবহার করতে পারি।					
18.	আমি পড়াশুনার বিষয়ে যেভাবে এগিয়ে যেতে চাই সেক্ষেত্রে আমার বাবা-মার থেকে পূর্ণ সমর্থন পাই।					
19.	আমি সহপাঠীদের কোনো সমস্যার সমাধানে পাশে থাকতে পারলে শান্তি অনুভব করি।					
20.	আমি সফল হই বা বিফল হই, চেষ্টা করতে ভালোবাসি।					
21.	নতুন শিক্ষা পরিবেশে আমি নিজেকে পরিবর্তন করতে চেষ্টা করি।					
22.	আমার কোনো আনন্দের কথা প্রিয়জনদের কাছে প্রকাশ করলে আমি স্বস্তি বোধ করি।					
23.	আমি পড়াশুনা করে ভবিষ্যতে আমার কাঙ্ক্ষিত লক্ষ্যে পৌঁছাতে পারবো।					
24.	আমি যা শিখি তার সঠিক ব্যবহার উপযুক্ত সময়ে করতে পারি।					
25.	আমি আমার ভবিষ্যৎ সম্পর্কে অসহায় বোধ করি।					
26.	আমি পড়াশুনা নিয়ে অধিক চিন্তা ভাবনা করেও যথাযথ সময়ে তার প্রয়োগ করতে পারি না।					
27.	শিক্ষক প্রশ্ন করলে আমি ভয়ে তা এড়িয়ে যাওয়ার চেষ্টা করি।					
28.	আমার চেয়ে কেউ বেশি সাফল্য অর্জন করলে আমি স্থির থাকতে পারি না।					

Appendix-F

Creative Problem-Solving Ability Test

এখানে সাতটি মজার / আকর্ষণীয় সমস্যা দেওয়া হয়েছে, যেগুলি তুমি ছবি এঁকে প্রতিটির সমাধান করবে। তোমার সমাধান যেন যতটা সম্ভব অন্যদের থেকে আলাদা হয়। তুমি সমস্যাগুলির এমনভাবে চিন্তা ভাবনা করে সমাধান করো যা অসাধারণ ও আকর্ষণীয় হতে পারে। অনুগ্রহ করে সবকটি (সাতটি) সমস্যার সমাধান নতুন চিন্তা ধারার মাধ্যমে দেওয়ার চেষ্টা করো। প্রতিটি সমাধান বিস্তারিতভাবে চিত্রের মাধ্যমে উপস্থাপন করো। সংক্ষেপে চিত্রের সম্পর্কে বিবরণ দাও এবং চিত্রের অংশগুলোর নাম উল্লেখ করো।

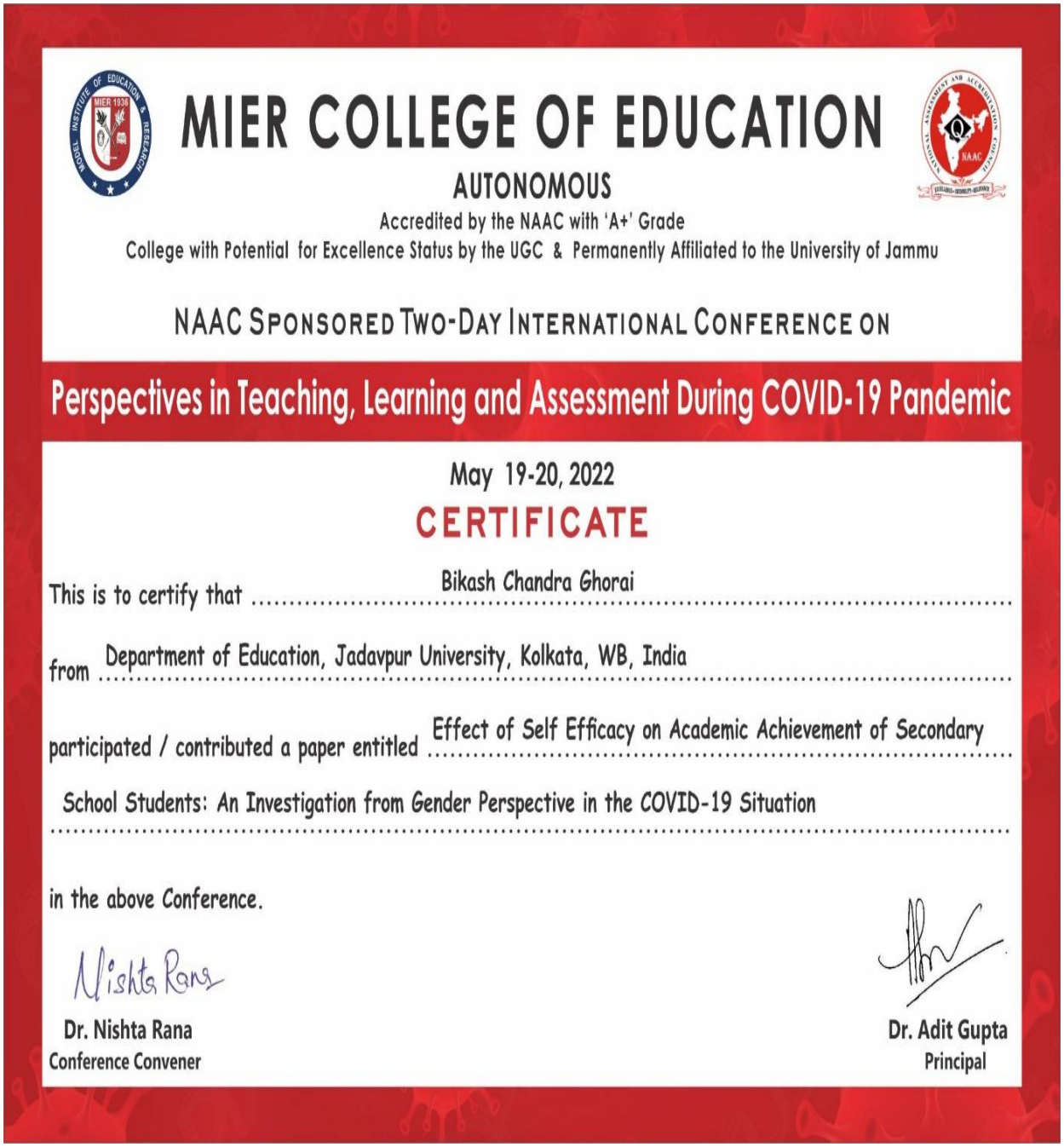
1. Show how you would stop a cat and dog from fighting. তুমি কিভাবে একটি বিড়াল এবং কুকুরের মধ্যে লড়াই থামাবে দেখাও।
2. If you were zoo-keeper and wanted to find how heavy an elephant is, how would you weight it? যদি তুমি চিড়িয়াখানার রক্ষক হতে এবং একটি হাতি কতটা ভারী তা জানতে চাইতে, তাহলে তুমি কীভাবে এটিকে ওজন করতে?

3. Design a special bed for people who have the problem of less sleep যাদের ভালো ঘুম হয় না এই রকম লোকেদের জন্য একটি বিছানার চিত্র অঙ্কন করো।
4. Design a special rocket in which astronauts can live on the moon for three weeks মহাকাশচারীরা চাঁদে তিন সপ্তাহ থাকতে পারবে এই রকম একটি বিশেষ ধরনের রকেটের নকশা করো।

5. Draw a picture showing how you could improve the design of your body যে ভাবে তুমি তোমার শরীরের আকৃতির উন্নতি করতে পারো তার একটি চিত্র অঙ্কন করো।
6. Design a special bicycle for a postman একজন পোস্টম্যানের জন্য একটি বিশেষ ধরনের সাইকেলের নকশা তৈরি করো।
7. If you were a policeman, how would you deal with bad men? তুমি যদি একজন পুলিশ হতে তবে তুমি খারাপ লোকদের সাথে কীভাবে ব্যবহার করবে?

Appendix-G

Photo Copy of Paper Presentation Certificate-1



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participated / contributed a paper entitled Effect of Self Efficacy on Academic Achievement of Secondary School Students: An Investigation from Gender Perspective in the COVID-19 Situation

in the above Conference.

Nishta Rana

Dr. Nishta Rana
Conference Convener

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Social Innovation, Education, and Sustainability

CENTRAL UNIVERSITY OF KERALA

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Date: February 12-13, 2025, Time - 10:00 A.M. - 6:00 P.M.

CERTIFICATE OF PRESENTATION

This Certificate is Presented To

BIKASH CHANDRA GHORAI

Research Scholar, Department of Education, Jadavpur University

In recognition of presenting the paper entitled on *"The Role of Spiritual Practices in Nurturing Sustainable Living among Adolescents"* in the *2-Day Online Global Summit on "Social Innovation, Education, and Sustainability"*, organized by the Department of Education, Jadavpur University, in collaboration with the Central University of Kerala, held on February 12 to 13, from 10:00 a.m. to 6:00 p.m.

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Prof. Joshith. V. P, Convenor

Dr. Manikanta Paria, Joint-convenor

Dr. Tausif Biswas, Joint-convenor

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Appendix-H

Photo Copy of Paper Publication

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Original Research Article

Systematic Review on Creative Problem-Solving Ability among School Going Adolescents: A Research Trends

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Abstract: This systematic review explores the research trends of Creative Problem-Solving Ability (CPSA) of adolescents in school from 2010-2024, using the guidelines of PRISMA. The review considered 27 of the selected research literature found in databases of Scopus, Elsevier, ProQuest, and Sage. Findings suggest interest in CPSA continues to grow in academia for the years 2019-2021, and research utilizing quantitative methods (88.9%) and a cross-sectional design (63%) were most prevalent. Studies commonly utilized surveys as an approach to conducting research as well as random sampling to create the samples used. Studies primarily examined college level students, followed by elementary, and secondary. Although research on CPSA can be found in many countries, Indonesia touted the most research output on CPSA over the years, with India, and Turkey following. The review found collaborative learning models, project-based learning models, and seamless learning environments to be an effective means to increase CPSA. The review identified the lack of qualitative research focusing on CPSA, and the necessity of research that was culturally contextualized or included diverse populations. The review established the imperative role CPSA plays in developing critical thinkers, adaptability, and academic success in all learners, and demonstrated the need for further research inclusive of varied methodologies to further develop adolescents' creative capacities around the world.

Keywords: *Creative Problem-Solving Ability, School Going Adolescents, Systematic Review.*

INTRODUCTION

Adolescents play a crucial role in the development of school-going children as they provide social, emotional, and cognitive support, often serving as role models. It is in this phase that they develop academic performance, personal identity and future adversities handling skills. At this stage the students become able to think critically and learn how to solve problems which are core values to learning. They start to be able to reason more and are able to deal with content in school like mathematics, science and literature (Blakemore and Choudhury, 2006). This knowledge development helps to develop their future intellect. During this developmental stage learners develop and begin to establish a personality and identify their values, beliefs and interests. This stage is important in regard to ego identity importance, as well as conceit, which enables them to be productive in an academic and social context (Erikson, 1968). Just like in the occupational stage, in the social stage, the adolescents develop more positive correlation between the academic results achieved and the eventual goal in life, hence making this stage very crucial in goal decisions or formation. It's the necessary period to foster various academic and emotional and behavioural competencies, including those needed to respond to academic stress and social frustrations. It should be noted that accumulating positive emotional regulation skills will reconsider the youth and give them the ability to study at school with less focus on emotions (Steinberg & Morris, 2001). More so peer pressure is more influential during the adolescent period where learners become more influenced on their behaviours, attitudes and even their choices of subjects to pursue. This indicated that positive peer influence can compel students to increase their participation in school activities while on their part negative influences contribute to students' disengagement on school activities. In developing appropriate skills for relationship management, it becomes important that the student's

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gains appropriate social skills in order to formally learn how to relate in school environments (Brown & Larson, 2009). During this stage children start to aspire to be more responsible for themselves and be more selective in choices they make, individually as well as between them and their teachers. This is important so that they are on their own when it comes to managing the academic and other areas of their lives. While learning time management, decision making over their education and personal goal setting the students acquire abilities that are vital for success throughout college and adulthood (Zimmer-Gembeck & Collins, 2003). students begin to weigh their educational options for the future. The choices made during this time range from the classes that have to be taken, the extra curriculum physical activities, and career choices determines the destiny of their post-secondary education. Regarding academic choices, youth are expected to act autonomously in their educational planning, enhancing this stage as the opportunity to match aspirations, abilities as well as the purpose (Eccles & Roeser, 2011).

Creative Problem-solving ability is highly relevant for students at this age because it enables students to develop skills that are useful in education, life experience, and career build-up. Student development, it enables him/her to reason as well as analyze situations hence enabling him /her to experience new challenges. As observed at the elementary and secondary youth, boys and girls experience different learning situations and contexts that define creativity. The ISCO ability: Thinking Critically enables them to grasp more fundamental ideas and knowledge and, therefore, excel in their academic endeavours (Fisher, 2005). Various sources prove that learners who practice creating and solving problems get good results. Sternberg and Lubart (1995) posit that higher achievement in such domains as mathematics, science and reading result from a student's improved involvement in the learning process when they are trained to think creatively. It is crucial at the elementary and secondary level especially because it is establishment of key frameworks. Autonomy to students by which the students are expected to look for answers to complex questions on their own; The amount of responsibility that they have to take to manage their learning experience is empowering to them, and enhances what is known as Personal Moral Agency, which is profoundly connected to learning self- efficacy. As concluded by Bandura (1997) in his research self-efficacy is very primary in academic environment because it enables students to persist with challenging undertakings. It also helps to orient a person in social space, which is a significant problem in the course of adolescence. Finally, by inventing kinds of solutions to social issues like how to solve conflict with friends, conflict solution makes students develop their social and emotional aspecto including empathy, social communication, and social cooperation as highlighted by Sak (2004). This is important for students' social relationships during learning and also outside learning context. In the contemporary environment this is valued more and more, as employers and the society expect to get a person who would be able to think out the ways to solve actual practical tasks (Robinson, 2006).

All these abilities should be nurtured when one is young; during their initial education in elementary and secondary schools so that they can handle future tasks in college and at the workplaces. Grouping of pupils enhances creativity and ownership of learning and thus fosters better and more effective learning process as well as promotes sustained learning interest among students (Craft, 2003). At this age, the brain still continues to develop most especially in the areas that have do with functions such as reasoning, planning, and solving problems. These functions are impaired during adolescence but the prefrontal cortex which is responsible for these functions in a continued maturation process and this results in better abstract thinking and coming up with better and creative solutions to most problems which may cropped up (Blakemore & Choudhury, 2006). Research also reveals that young people are more capable of performing extra-ordinary tasks than ordinary tasks because they are creative problem solvers (Runco & Acar, 2012). School is a place where the young person interacts with peers, endeavours to establish an identity, as well as faces academic challenges all of which need creativity abilities. Such social demands compel adolescents to come up with new tactics of handling their conflicts, moderating feelings, and balancing between responsibilities, all these foster problem-solving abilities (Larson, 2011). Since the students are being assigned more freedom and freedom is more encouraged in adolescents, adolescents learn how to be creative and solve problems in school settings. In extracurricular activities, group assignments, create independent opportunities for adolescents they learn how to approach different situations independently (Beghetto, 2007). Emotional intelligence is at its peak in adolescence, this is major improvement to creativity. Fong noted that there is evidence of the emotional predictors of creativity by showing that positive and negative emotions predict how adolescents frame and solve problems. Moreover, peer relations do offer the social setting which fosters brainstorming due to people's shared experiences in relation to problem solving.

Rationale of the Study

Creative problem-solving (CPS) is a vital cognitive ability, increasingly emphasized in education systems worldwide to prepare students for the challenges of the 21st century. Adolescents, in particular, are at a critical stage of cognitive development, where the capacity for creative thinking and adaptive reasoning can be cultivated. Understanding the factors that influence CPS abilities during this period is essential for developing educational practices that foster creativity, flexibility, and problem-solving ability. The need for a systematic review of CPS among school-going

adolescents arises from the diverse approaches and outcomes reported in current literature, which highlight both successes and challenges in promoting CPS. Several studies have shown that teaching strategies and learning environments significantly impact CPS development. Michele Gaglione (2021) found that social science elective classes positively affected students' perceptions of their CPS attributes, with classroom environments accounting for 29% of the variance. This indicates that contextual factors, such as how teachers structure the learning environment, play a substantial role in developing CPS. Similarly, Nonthamand & Songkhla (2017) demonstrated the strong correlation between group discussions and CPS abilities, underscoring the importance of collaborative learning environments in fostering creativity. Different educational models have also been linked to enhanced CPS ability. Ida Fiteriani *et al*., (2021) highlighted the positive impact of Project-Based Learning (PjBL) with a STEM approach, which improved both CPS abilities and metacognitive skills. In contrast, Fatmawati (2020) showed that students struggled with creatively solving problems related to environmental pollution, indicating gaps in how certain subjects are taught in terms of fostering creativity. These variations suggest that the application of creative problem-solving models in different contexts is uneven, with some approaches proving more effective than others. Cognitive flexibility, fluency, originality, and elaboration are recognized as core components of CPS, with Khamcharoen *et al*., (2021) emphasizing flexibility as the most crucial aspect. However, as Sipayung *et al.,* (2021) pointed out, many students exhibit low levels of fluency, flexibility, and originality in solving problems, indicating a need for more targeted interventions to develop these skills during adolescence. The findings of Maker *et al*., (2023) support the notion that age-related development, teaching methods, and cultural factors interact in the growth of CPS abilities, emphasizing the role of tailored educational strategies in different contexts. Moreover, gender and socio-economic factors also play a role in CPS development. Rakesh & Geetha (2016) revealed that male students generally outperformed females in CPS ability, and urban students outperformed their rural counterparts, suggesting that access to resources and differing learning environments could be influential. However, Kumar (2020) found no significant correlation between creativity and problem-solving abilities in higher secondary students, which complicates the understanding of how creativity directly influences CPS in adolescent populations. Recent studies across various contexts have shown the significance of CPS in improving academic performance, particularly in STEM fields, as well as enhancing social and emotional development. However, the development of CPS skills among adolescents can be influenced by multiple factors, including teaching methods, classroom environments, gender, socio-economic background, and exposure to creative problem-solving models. Some studies highlight the positive impact of project-based learning (Chen & Chang, 2021), group discussions (Nonthamand & Songkhla, 2017), and creative teaching methods (Hu *et al.,* 2017) in fostering CPS abilities. In contrast, others emphasize challenges such as gender disparities (Rakesh & Geetha, 2016) and a lack of flexibility and originality in adolescent problem-solving approaches (Sipayung *et al.*, 2021). In the present study will aim to consolidate the evidence on how Creative Problem Solving abilities are fostered among school-going adolescents. By synthesizing findings from diverse educational contexts and identifying gaps in current research, this review will provide educators, policymakers, and researchers with insights into effective strategies for promoting CPS during adolescence. It will also explore how factors such as year, nature of the study, method, design, educational level, sapling technique, sample size, and countries influence adolescents' creative problem-solving abilities, ultimately contributing to more refined and inclusive approaches to CPS education. It will highlight how different educational models and environments contribute to CPS development and offer recommendations for enhancing the creative capacities of adolescents in school settings, better equipping them for future challenges.

Objective of the Study

The objective of this study is to examine the research related on creative problem-solving ability concerning school going adolescents from 2010 to 2024 by using the Systematic Reviews and Meta-Analysis criteria (PRISMA).

Research Questions

The research questions this study aimed to answer are:

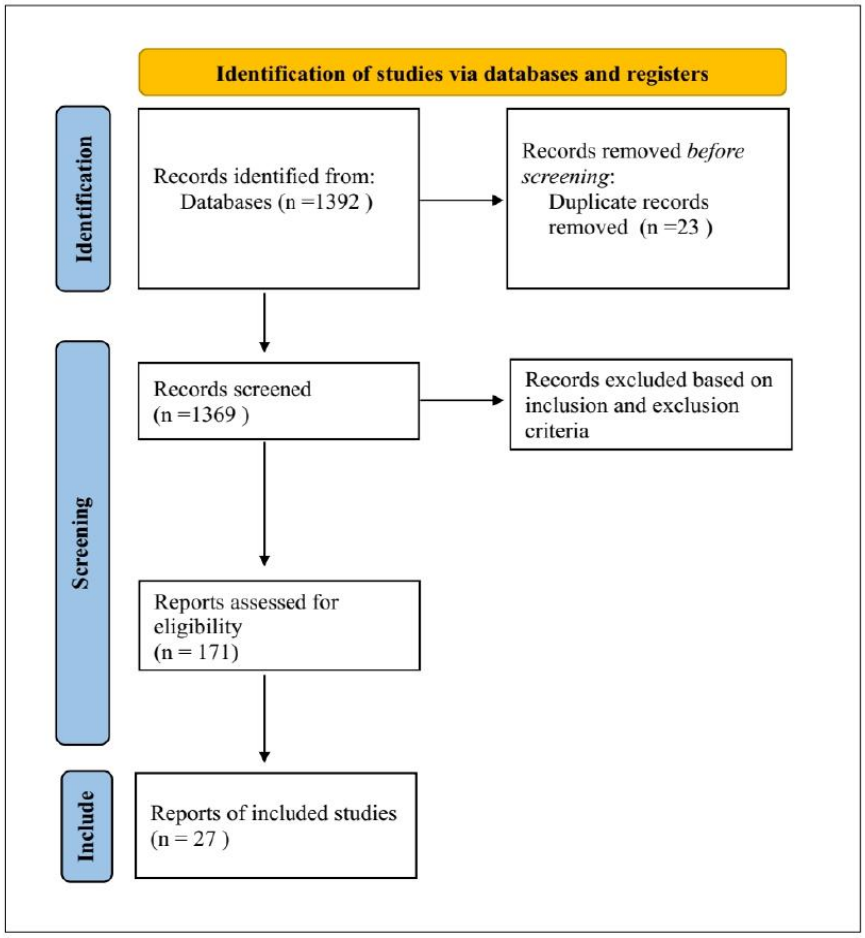
1. What are the publication years selected on creative problem-solving ability among school going adolescents?
2. What is the nature of study selected on creative problem-solving ability among school going adolescents?
3. What are the research methods used in selected on creative problem-solving ability among school going adolescents?
4. What are the research design used for selecting on creative problem-solving ability among school going adolescents?
5. What are the education level used for selecting on creative problem-solving ability among school going adolescents?
6. What sampling techniques have been used to assess the effectiveness on creative problem-solving ability among school going adolescents?
7. What are the sample size used for selecting on creative problem-solving ability among school going adolescents?
8. Which are the countries that have conducted studies on creative problem-solving ability among school going adolescents?

METHODOLOGY

The present study uses descriptive method. Data were collected using documentation studies from the Scopus database and bibliometric analysis of academic articles related to creative problem-solving ability. This study uses a bibliometric analysis strategy. This study based on Preferred Reporting Items for Systematic Review and Meta Analyses (PRISMA) guidelines (Chuane *et al*., 2022). The study comprehensively reviews existing literature on creative problem-solving ability conducted from 2010 to 2024.

Data Sources and Search Strategy

The articles included in this study were generated through a systematic search in online databases like Elsevier, ProQuest, Scopus, and Sage. Keywords used to search relevant research articles in the databases included "Creative Problem Solving" AND "Adolescents" AND "Cognitive Ability" AND "Education". The time range chosen for the literature was from 2010 to 2024. The total number of records identified through database searching is 1392. The PRISMA flow diagram used to search and refine articles is shown in Figure 1.



Inclusion and Exclusion Criteria

In order to determine which studies need to be included in the review, criteria of inclusion and exclusion were formulated. After 23 duplicate articles remove, the criteria applied. The criteria are based on publication year, subject area, documents type, key words, publication language, publication Stage, and publication access as shown in Table 1. After criteria applied 171 article saved as CSV file then screened the titles and abstracts to check the articles against inclusion and exclusion criteria. Accordingly, 27 research articles met the inclusion criteria and 144 articles were screened out.

Table 1: Inclusion and Exclusion Criteria

Year	2010 - 2024
Subject Area	Social Science; Psychology; and Arts and Humanities
Document Types	Articles
Key Words	Creative Problem solving; Adolescents; Creative Thinking; Convergent and Divergent Thinking; and Students
Publication Language	English
Publication Stage	Final
Publication Access	Open Access

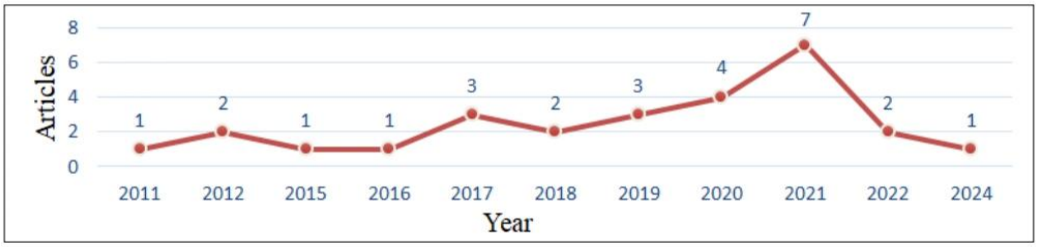
Selection of Article and Data Extraction

After the full-text articles were assessed using quality assessment criteria, all 27 articles were included in the review. The data from the publications considered in the systematic review are then entered in a Microsoft Excel sheet. This method assisted in coding the essential details from pertinent publications. Generally speaking, the articles were coded according to the author's name, title, year, nature of the study, method, design, educational level, sapling technique, sample size, and countries. The conclusions of all the articles that were chosen were then compiled.

RESULTS

Table 2 and Figure 1: Showing publication years selected on creative problem-solving ability among school going adolescents

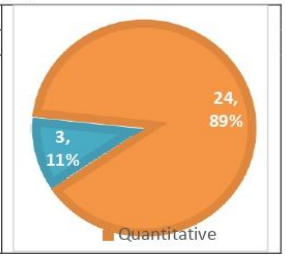
Year	2011	2012	2015	2016	2017	2018	2019	2020	2021	2022	2024
N	1	2	1	1	3	2	3	4	7	2	1
%	3.7	7.4	3.7	3.7	11.1	7.4	11.1	14.8	25.9	7.4	3.7



The data on creative problem-solving research among school-going adolescents, spanning 2011 to 2024 with 27 studies, highlights an evolving focus in this field. Initial low interest gave way to a surge in publications from 2019 to 2021, reflecting growing recognition of these abilities in education, aligning with global goals emphasizing creativity and critical thinking. However, the decline in 2024 suggests a need for sustained research. Future studies should investigate targeted interventions and teaching strategies to ensure the recent momentum in enhancing creative problem-solving abilities leads to lasting educational improvements.

Table 3 and Figure 2: Showing the nature of study selected on creative problem-solving ability among school going adolescents.

Nature of Study	N	Percentage (%)
Quantitative	24	88.9
Qualitative	3	11.1

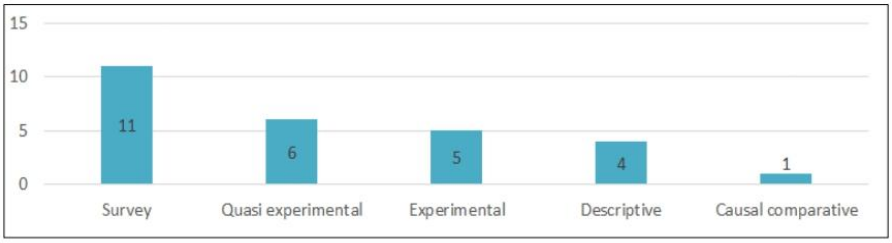


The analysis of 27 studies on creative problem-solving among adolescents reveals a strong preference for quantitative methods (88.9%), emphasizing statistical analysis to assess creative abilities and educational outcomes. While effective for generalizable conclusions, the limited use of qualitative research (11.1%) offers an

opportunity for deeper insights into students' experiences and contextual factors influencing creativity. Qualitative studies can capture nuances not easily measured quantitatively. Future research should strive for a balance between both approaches to gain a more comprehensive understanding of how adolescents develop creative problem-solving skills, enhancing educational strategies and outcomes.

Table 4 and Figure 3: Showing the research methods used in selected on creative problem-solving ability among school going adolescents.

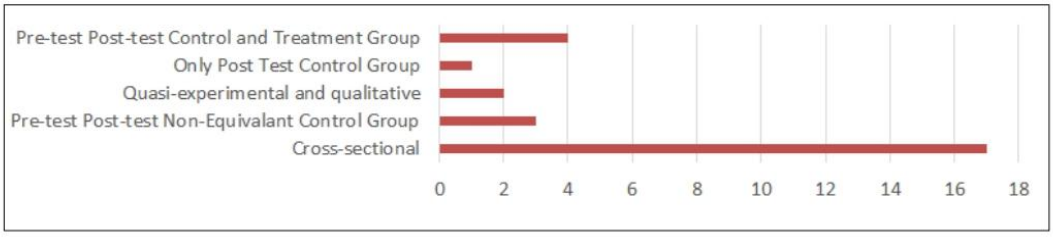
Method	Survey	Quasi Experimental	Experimental	Descriptive	Casual Comparative
N	11	6	5	4	1
Percentage (%)	40.7	22.2	18.5	14.8	3.7



The analysis of 27 studies on creative problem-solving among adolescents reveals a dominance of survey methods (40.7%), emphasizing large-scale data collection for generalizable trends. Quasi-experimental methods (22.2%) and experimental methods (18.5%) are also common, reflecting a focus on evaluating interventions and establishing causal relationships. Descriptive methods (14.8%) provide contextual insights, while causal comparative methods (3.7%) are rarely used, indicating a gap in exploring demographic or contextual differences. The preference for surveys highlights a quantitative focus, but future research should incorporate more diverse methodologies to better understand and improve creative problem-solving in educational settings.

Table 5 and Figure 4: Showing the research design used for selecting on creative problem-solving ability among school going adolescents.

Design	Cross-sectional	Pre-test Post-test Non-Equivalant Control Group	Quasi-experimental and qualitative	Only Post Test Control Group	Pre-test Post-test Control and Treatment Group
N	17	3	2	1	4
Percentage (%)	63	11.1	7.4	3.7	14.8



The analysis of 27 studies on creative problem-solving among adolescents reveals that most (63%) use cross-sectional designs, offering a snapshot of creative problem-solving abilities at a single point in time. Pre-test and post-test designs (11.1%) assess intervention effectiveness, while quasi-experimental and qualitative designs (7.4% each) explore educational program impacts and personal experiences, respectively. One study (3.8%) uses a post-test only design. 14.8% comes under Pre-test Post-test Control and Treatment Group. The prevalence of cross-sectional studies indicates a focus on current trends, while the limited use of qualitative methods highlights a gap in understanding personal and contextual factors. A diverse mix of research designs could enrich insights into adolescent creativity.

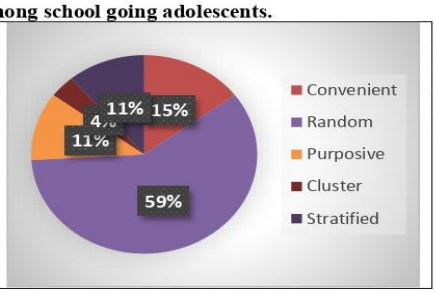
Table 6 and Figure 5: Showing the education level used for selecting on creative problem-solving ability among school going adolescents.

Education Level	Elementary	Secondary	College
N	9	7	11
Percentage (%)	33.3	25.9	40.7

The analysis of 27 studies on creative problem-solving among adolescents reveals that 33.3% focus on elementary students, highlighting the importance of early development of these skills. Secondary education participants make up 25.9%, reflecting a key phase where problem-solving abilities become more refined. The largest portion (40.7%) involves college students, emphasizing the role of creative problem-solving in higher education. This diverse representation underscores the value of fostering creativity across all educational levels. Future research should continue examining these skills at different stages to inform practices that effectively nurture creativity and prepare students for real-world challenges.

Table 7 and Figure 6: Showing sampling techniques have been used to assess the effectiveness on creative problem-solving ability among school going adolescents.

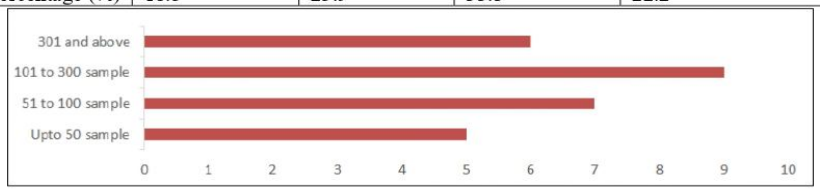
Type of Sampling	N	Percentage (%)
Convenient	4	14.8
Random	16	59.3
Purpose	3	11.1
Cluster	1	3.7
Stratified	3	11.1



The analysis of 27 studies on creative problem-solving among adolescents reveals that random sampling is the most common method (59.3%), ensuring representativeness and generalizability. Convenient sampling is used in 14.8% of studies, but its limited use reflects a focus on more rigorous approaches. Purposive and stratified sampling, each employed in 11.1% of studies, target specific subgroups, offering valuable insights, while cluster sampling is rare (3.7%). The predominance of random sampling highlights the importance of unbiased sampling in this research area, with opportunities for exploring diverse techniques to enhance the understanding of creative problem-solving ability.

Table 8 and Figure 7: Showing the sample size used for selecting on creative problem-solving ability among school going adolescents

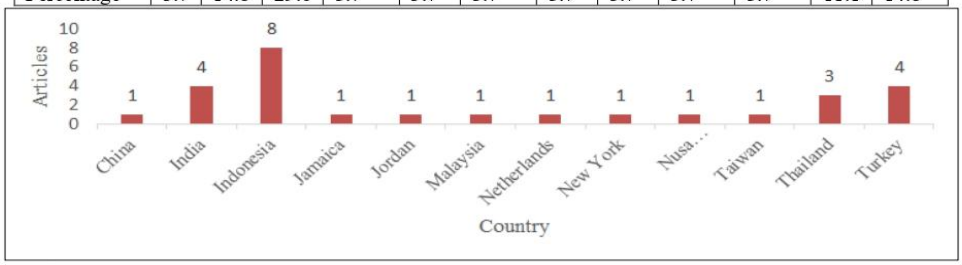
Sample size	Upto 50 sample	51-100 sample	101-300 sample	301 and above sample
N	5	7	9	6
Percentage (%)	18.5	25.9	33.3	22.2



The analysis of 27 studies on creative problem-solving among adolescents shows most studies on adolescent creative problem-solving abilities used moderate samples of 101–300 (33.3%), with notable portions at 51–100 (25.9%) and over 300 (22.2%). Studies under 50 (18.5%) were least frequent, highlighting researchers' preference for balanced sample sizes for reliable, feasible analysis. Future research could benefit from larger sample sizes to improve the generalizability and allow for more nuanced analyses of demographic factors influencing creative problem-solving abilities in educational settings.

Table 9 and Figure 8: Showing the countries that have conducted studies on creative problem-solving ability among school going adolescents

Country	China	India	Indonesia	Jamaica	Jordan	Malaysia	Netherlands	New York	Nusa Tenggara Barat.	Taiwan	Thailand	Turkey
N	1	4	8	1	1	1	1	1	1	1	3	4
Percentage	3.7	14.8	29.6	3.7	3.7	3.7	3.7	3.7	3.7	3.7	11.1	14.8



The analysis of 27 shows Indonesia leads with 8 studies (29.6%) on adolescent creative problem-solving, showing a strong research focus in this area. India and Turkey follow with 4 studies each (14.8%), and Thailand contributes 3 studies (11.1%). Other countries, including China, Jamaica, and Malaysia, each account for 1 study (3.7%). This distribution highlights Indonesia's prominent role, with significant contributions from India and Turkey, while other regions show limited but emerging interest in this research field. This data reflects a clear geographic concentration of research efforts in Asia, particularly in Indonesia, India, and Thailand, as they collectively represent over half of all studies.

DISCUSSION

This systematic review investigates trends in creative problem-solving ability among school-going adolescents from 2011 to 2024. The analysis reveals a significant shift in research focus, particularly between 2019 and 2021, when publications surged, reflecting an increasing recognition of the importance of creativity in education aligned with global educational goals (Amabile, 2019). This study on creative problem-solving (CPS) among school going adolescents underscores its centric role in fostering critical life skills crucial for academic success, personal development, and future career readiness. Adolescence is marked by significant cognitive and emotional maturation, a stage in which CPS ability can be developed to enable students to think independently, approach challenges creatively, and adapt to diverse situations (Blakemore & Choudhury, 2006). During this period, adolescents experience growth in areas like reasoning, planning, and complex problem-solving, making it a prime time to strengthen CPS through targeted educational practices.

One key finding is that collaborative educational models, including group discussions and project-based learning, have shown effectiveness in enhancing CPS abilities in adolescents. Studies, such as those by Nonthamand & Songkhla (2017) and Fiteriani *et al*., (2021), suggest that interactive learning environments that encourage teamwork and exploration are particularly impactful in fostering creativity and flexibility, two core components of CPS. These learning settings allow students to view problems from multiple perspectives, thereby promoting cognitive flexibility and originality, which are essential for innovative thinking.

Interestingly, the review reveals a strong preference for quantitative research methods in studying CPS (88.9%), with surveys and quasi-experimental methods dominating this area of research (Creswell & Poth, 2018). This focus on quantitative analysis has been valuable in providing generalizable insights into the factors influencing CPS. However, qualitative studies remain limited (11.1%), indicating an opportunity to enrich this field with deeper insights into the personal

and contextual factors shaping CPS in adolescents (Khamcharoen *et al*., 2021). Qualitative research could capture the nuanced ways students perceive and approach creative problem-solving, shedding light on influences that quantitative data may overlook, such as individual motivation, social interactions, and classroom dynamics. In terms of research design, a majority (63%) utilized cross-sectional designs, providing a snapshot of abilities at a specific time. However, the low utilization of pre-test/post-test designs indicates a gap in assessing intervention effectiveness (Gall *et al*., 2020). Such designs are crucial for evaluating the impact of educational programs and strategies on creative problem-solving abilities. The findings also reveal a diverse representation across educational levels, with 40.7% focusing on college students. This highlights the need to foster creative skills across all educational stages, from elementary to higher education, to ensure students are adequately prepared for real-world challenges (Kafai & Resnick, 2013). Additionally, random sampling emerged as the most common technique (59.3%), which enhances the validity of findings; however, the reliance on convenience sampling (14.8%) indicates a potential area for improvement in future studies. Geographically, Indonesia leads with 29.6% of studies, followed by India and Turkey, reflecting a concentration of research efforts in specific regions (Nusrat & Akter, 2022). This geographic focus suggests a need for further exploration in diverse cultural contexts to understand how creativity is cultivated among adolescents globally.

The review also highlights variations in CPS abilities across different demographics, including gender, socioeconomic background, and urban-rural divides. For example, Rakesh & Geetha (2016) found that male and urban students tend to outperform female and rural students in CPS, likely due to differences in access to resources and diverse educational settings. These findings suggest that demographic and contextual factors may play a role in CPS development, potentially impacting students' readiness for complex problem-solving tasks in both academic and social contexts.

Furthermore, while CPS has been positively correlated with academic performance in areas like STEM, some studies report challenges in applying CPS to certain subjects, such as environmental science (Fatmawati, 2020). This indicates that while general CPS skills are beneficial, specific subjects may require tailored instructional approaches to maximize the benefits of CPS. The review calls for future research to include diverse methodologies and interventions targeting flexibility, fluency, and originality. Such an approach could better address demographic gaps, enabling a more inclusive, supportive environment for developing CPS in students across varied educational settings, ultimately equipping them to meet real-world challenges effectively.

In conclusion, this review underscores the growing emphasis on creative problem-solving among adolescents but also highlights gaps in research methodologies and geographic diversity. Future studies should adopt a balanced approach that combines qualitative and quantitative methods, includes diverse educational levels, and expands to various cultural contexts to enhance the understanding and enhancement of creative problem-solving abilities in education. However, the decline observed in 2024 suggests a potential need for sustained research efforts to maintain this momentum.

CONCLUSION

In conclusion, this systematic review emphasizes the critical role of creative problem-solving (CPS) in fostering essential ability among school-going adolescents, particularly in the context of their cognitive and emotional development. The surge in publications from 2019 to 2021 reflects a growing recognition of CPS's importance in education; however, the decline in 2024 signals a pressing need for continued research to sustain this focus. The predominance of quantitative research methods offers valuable insights but also highlights the necessity for qualitative studies to explore the nuanced factors influencing CPS, such as individual motivation and social dynamics. Furthermore, variations in CPS abilities across demographics underscore the importance of tailored instructional approaches and interventions to ensure equity in educational outcomes. To effectively prepare students for real-world challenges, future research should adopt diverse methodologies, addressing the needs of all educational levels and cultural contexts. Ultimately, a comprehensive understanding of CPS development is vital for cultivating innovative, adaptable thinkers who can navigate complex problems in an increasingly dynamic world. The integration of targeted strategies in educational practices will be essential to foster these abilities sustainably across various settings.

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Appendix- I

Bona Fied Letter

যাদবপুর বিশ্ববিদ্যালয়
কলকাতা-৭০০০৩২, ভারত

*JADAVPUR UNIVERSITY
KOLKATA-700032, INDIA

DEPARTMENT OF EDUCATION

Date: 28-07-2025

To Whom It May Concern

This is to certify that **SRI BIKASH CHANDRA GHORAI**, s/o Madan Mohan Ghorai, is a bonafide Ph.D. research scholar of the Department of Education, Jadavpur University. He is pursuing his Ph.D. degree from the Department, under the supervision of the undersigned, bearing Registration No. A00ED1100321. The title of his Ph.D. dissertation is ***Creative Problem-Solving Ability and Educational Wellbeing among School-Going Adolescents: The Meditating Effects of Self-efficacy and Spiritual Practices.***

To successfully complete his Ph.D. research, Sri Bikash Chandra Ghorai needs to conduct field survey and collect relevant data from Higher Secondary level schools across Purba Medinipur and Psachim Medinipur Districts of West Bengal. The undersigned hereby requests the concerned to grant him the necessary permission to conduct his research survey in their esteemed institution. The purpose of this survey will be purely academic and research-oriented and all information collected will be kept strictly confidential and used solely for research purposes.

Kind cooperation of the institutional authorities in this regard is earnestly solicited.

28/07/25

(DR. LALIT LALITAV MOHAKUD)
Supervisor & Associate Professor
Department of Education
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*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

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দূরবার্তাঃ (৯১) - ০৩৩ - ২৪১৪-৬০০৮

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Appendix- J

Review Matrices

Creative Problem-Solving Ability

Author(s)	Year	Location	Objective	Methodology	Findings/Summary
Akdeniz and Alpan	2020	Abroad	Examine creative problem-solving styles among gifted students	Survey of 151 gifted students	Gifted students preferred the conceptualizer style, no gender differences. CPS styles differed by talent area (academic, music, arts).
Amran	2019	Abroad	Review CPS as a priority in Malaysia's Education Blueprint	Literature review	CPS development is a priority for future skills, focusing on enhancing creativity in education.
Barman and Dasgupta	2024	India	Investigated mindfulness, cognitive flexibility, and CPS among secondary school students in Assam	cross-sectional design	Mindfulness enhances cognitive flexibility, which in turn predicts higher CPS performance.
Diani	2019	Abroad	Evaluate the SSCS model on creative problem-solving in 8th graders	Experimental vs. control group, effect size analysis	SSCS model strongly enhanced creative problem-solving in students.
Fatmawati	2020	Abroad	Assess creative problem-solving in biology students solving pollution problems	Survey, problem-solving stages evaluation	Students showed moderate strengths in CPS, but lacked strong application in certain stages like development.
Fiteriani et al.	2021	Abroad	Test PjBL-STEM model on physics students' CPS and metacognition	Experimental vs. control group, MANOVA, effect sizes	PjBL-STEM model improved CPS and metacognitive skills in physics students.

Hooijdonk et al.	2023	Abroad	Examine CPS indicators, divergent thinking, and achievement in primary school	Survey and CPS indicator assessment among 5th-6th graders	CPS theory was confirmed, showing that CPS indicators, including divergent thinking, contribute to achievement.
Keles	2022	Abroad	Compare CPS in gifted and non-gifted students	Survey, CPS features inventory with 73 gifted and 302 non-gifted students	Gifted students showed better divergent thinking and general knowledge.
Kumar	2020	India	Assess CPS and creativity in secondary school students	Survey and analysis of problem-solving vs. creativity	Students demonstrated strong problem-solving skills but moderate creativity; no correlation between the two.
Lin et al.	2011	Abroad	Assess CPS in math education	Survey of 409 students in math, analysis of divergent/convergent thinking	CPS alongside content knowledge strongly predicts math problem-solving success.
Michele Gaglione	2021	Abroad	Link CPS to classroom environment in middle school students	Survey, analysis of CPS perception and learning environment	Participation in humanities-based courses enhances CPS perception, with the classroom environment explaining 29% of CPS variation.
Mishra and Pandey	2024	India	Examined the role of mindfulness in enhancing creative cognition and mental health among undergraduate students in central India	Survey method	Mindfulness significantly predicts CPS ability and reduces stress and emotional exhaustion.
Muin et al.	2018	Abroad	Examine CPS in math for adaptive reasoning improvement	Survey and analysis in math education	CPS improves adaptive reasoning, with intuitive reasoning benefiting most.
Padmavathy	2012	India	Evaluate CPS among IX-grade students	CPS test (Passi-Usha) with 317 students	Weaknesses were found in originality in CPS; more targeted programs needed.

Rakesh & Geetha	2016	India	Assess CPS among secondary school students	Survey of 200 students	Gender and location (urban vs. rural) influenced CPS, with boys and urban students performing better.
Tripathi and Srivastava	2024	India	Explored the relationship between CPS and psychological resilience in 400 secondary school students	Survey method	Higher CPS scores correlate with greater resilience, adaptability, and stress tolerance.
Willemsen et al.	2024	Abroad	Assess instructional support in CPS for upper-elementary students	Experimental design, random associations, and constraint identification	Instructional support improved convergent thinking, particularly in students with stronger mathematical abilities.
Zulyadaini	2017	Abroad	Evaluate CPS model in high-school mathematics	Experimental design, t-test comparing CPS vs. traditional methods	CPS model significantly improved problem-solving in math classes.

Educational wellbeing

Author(s)	Year	Location	Objective	Methodology	Findings/Summary
Bogerd et al.	2020	Abroad	Review nature-based educational environments and student well-being	Systematic review of 3,410 studies	Green spaces improved student well-being, comfort, and cognitive restoration; results were inconsistent due to methodological variation.
Bortes et al.	2021	Abroad	Explore the relationship between subjective well-being and academic performance	Longitudinal study of 723 Swedish adolescents	Girls with higher well-being performed better academically. High early achievement predicted lower later well-being in girls.

Bottomley et al.	2023	Abroad	Investigate gender differences in well-being among physics students	Survey of 310 students	Women reported lower physics identity and self-efficacy, but well-being levels were similar to men's.
Chen & Lu	2014	Abroad	Examine how after-school activities affect well-being and achievement	Survey of Taiwanese adolescents	Academic programs improved grades, while cram schools harmed psychological well-being.
Dobosz & Hetmanczyk	2023	Abroad	Review Chinese students' mental health in educational contexts	Review of 18 studies	Well-being varied based on academic demands, with limited mental-health research specific to Chinese education systems.
Donoso	2021	Abroad	Investigate ICT access and adolescent well-being	National data from Chilean secondary schools	Higher digital development in schools correlated with greater subjective well-being.
Elovainio et al.	2011	Abroad	Link organizational justice among staff to student well-being and achievement	Survey across 136 Finnish secondary schools	Low procedural justice was associated with dissatisfaction, while relational injustice linked to poorer grades.
Erdem & Kaya	2021	Abroad	Examine the relationship between SES, well-being, and academic success	PISA 2018 data analysis	SES was the strongest predictor of academic performance; well-being contributed modestly to academic success.
Gill et al.	2021	Abroad	Analyze how students define success and its relationship with well-being	Review of 17 studies	Adolescents valued intrinsic goals, growth, and achievement, which were positively tied to well-being and motivation.
Green et al.	2014	Abroad	Compare student well-being in private and public schools	Comparison of private and public schools across three Spanish regions	Private schooling initially appeared to improve satisfaction but did not guarantee better well-being after adjusting for quality factors.

Grosa & King	2023	Abroad	Study well-being of return-migrant children adapting to new school systems	Interviews with 40 Latvian return-migrant children	Children struggled with reintegration and language barriers. Calls for better language support and teacher training.
Hossain et al.	2023	Abroad	Review well-being models and definitions across studies	Review of 33 studies	Four main well-being models emerged: hedonic, eudaimonic, integrative, and combined.
Hunner-Kreisel et al.	2022	Abroad	Examine the impact of structural and policy influences on youth well-being	Review of youth well-being in both countries	Limited infrastructure and support in both countries restricted youth development.
Karvonen	2018	Abroad	Investigate links between school achievement and well-being	Longitudinal study of 100,413 students	Low achievement was linked to low well-being, with socioeconomic disadvantage shaping both outcomes.
Kiuru et al.	2020	Abroad	Investigate how relationships with teachers, peers, and parents affect well-being	Longitudinal study of 848 adolescents	Strong relationships with teachers, peers, and parents improved both well-being and academic performance.
Leventhal et al.	2015	India	Compare resilience and health curricula on adolescent girls' well-being	Randomized controlled trial with 3,560 adolescent girls	The integrated curriculum showed the greatest improvements in emotional, physical, social, and educational well-being.
Liu et al.	2021	Abroad	Investigate academic well-being in webcast classes for underprivileged students	Study of twelfth-graders in underprivileged regions	Self-efficacy, empathy, and academic buoyancy were key factors for well-being in online learning.
Lu	2021	Abroad	Examine parental education expectations and their impact on adolescent well-being	Data from the China Education Panel Survey	Higher parental expectations improved well-being but excessive academic pressure had a negative impact.

Miller	2013	Abroad	Investigate the link between well-being and academic achievement in students	Survey of 1,081 students	Well-being was positively linked with academic achievement; gender and socioeconomic factors did not significantly change this relationship.
Norwich et al.	2022	Abroad	Discuss well-being and mental health during COVID-19 in English schools	Theoretical discussion on mental illness and positive well-being	Calls for whole-school well-being approaches alongside mental health support services.
Pulimeno et al.	2020	Abroad	Review the role of schools in promoting well-being through health education	Review of 74 articles and 17 books	Schools are ideal environments for promoting well-being; integrating health education could improve both academic and health outcomes.
Rashmi & Paul	2022	India	Compare educational well-being between tribal and non-tribal children	Data from the India Human Development Survey	Tribal children showed lower well-being; economic status and adult education partially explained the gap.
Stasulane	2017	Abroad	Analyze children's school well-being across 11 European countries	Data from MYWeB (Measuring Youth Well-being)	Emotional and social dimensions of well-being must be considered alongside academic learning.
Stephenson	2023	Abroad	Explore Drama Worldbuilding as a creative pedagogy for children's well-being	Longitudinal action research	Drama Worldbuilding fostered critical reflection, hope, and collaboration.
Torrano	2021	Abroad	Examine how school psychologists promote student well-being	Study of school psychologists' practices	Psychologists focused more on addressing problems than on fostering well-being; clearer frameworks are needed.

Self-efficacy

Author(s)	Year	Location	Objective	Methodology	Findings/Summary
Abusalehi et al.	2019	Abroad	Investigate academic self-efficacy among students	Cross-sectional design, stratified sampling of 385 students from Tehran University	Age and academic degree level significantly related to self-efficacy. Location showed no significant effect.
Adelodun & Asiru	2015	Abroad	Explore self-efficacy and gender in English writing performance	Survey of 40 high-achieving students	Positive relationship between self-efficacy and writing performance, gender showed no significant effect.
Ahmad & Safaria	2013	Abroad	Examine how self-efficacy influences academic performance and social interaction	Survey of 15 fifth-grade students	High self-efficacy correlated with better performance in mathematics, willingness to pursue complex subjects.
Ahmadi	2020	Abroad	Examine relationship between academic self-esteem and self-efficacy	Survey of 365 high school students	Academic self-esteem components were linked to self-efficacy, with some components indirectly affecting academic achievement.
Ahuja	2016	India	Assess self-efficacy, educational aspirations, and academic achievement	Survey of 210 ninth-graders in Delhi	Girls had higher scores in self-efficacy and academic achievement, positive correlation between self-efficacy and academic achievement.
Andretta et al.	2020	Abroad	Study academic, social, and emotional self-efficacy	Survey of 3,485 adolescents	Emotional self-efficacy strongly predicted well-being; identified five self-efficacy profiles.

Anupam Lata	2019	India	Explore self-efficacy and academic achievement across gender and location	Survey of 280 adolescents	Positive relationship between self-efficacy and academic achievement, differences based on residential background.
Atoum & Al-Momani	2018	Abroad	Examine perceived self-efficacy among secondary students	Survey of 356 secondary students	Moderate self-efficacy levels; academic achievement affected self-efficacy, but gender did not.
Cheema & Kitsantas	2014	Abroad	Assess classroom climate and math self-efficacy	Analysis of PISA data from 4,199 students	Better disciplinary climate reduced achievement gaps, high self-efficacy increased them, effects varied by race and gender.
Goulao	2014	Abroad	Investigate self-efficacy in online learning settings	Survey of 63 adult learners	High academic self-efficacy correlated with performance, significant positive relationship found ($r = 0.286$, $p < 0.05$).
Hasan & Parvez	2019	Abroad	Determine the effect of self-efficacy, gender, and location on achievement	Survey of 400 secondary students	Positive relationship between self-efficacy and academic performance; gender significantly influenced both factors.
Hwang et al.	2016	Abroad	Examine performance–self-efficacy interactions over time	Longitudinal study of 1,177 students over 5 years	Early academic performance predicted later self-efficacy, which in turn predicted later achievement.
Kanmani	2018	India	Assess self-efficacy and academic success among marginalized students	Survey of 500 high school students	No significant correlation between self-efficacy and academic success; contextual factors influenced outcomes.
Kleppang et al.	2023	Abroad	Investigate mastery experiences and self-efficacy	Survey of 9,221 adolescents	Mastery experiences explained 10.7% of variance in self-efficacy, with peer and parental support playing a key role.

Malpass et al.	2010	Abroad	Study factors influencing math achievement among gifted students	Survey of gifted students	Self-efficacy related to achievement, but did not directly predict high-stakes performance.
Meera & Jumana	2015	India	Investigate self-efficacy and English performance among secondary students	Survey of 520 secondary students	Rural and urban students differed significantly in self-efficacy and performance, no gender differences.
Motlagh et al.	2011	Abroad	Assess the role of self-regulation and self-evaluation in academic achievement	Survey of 250 high school students	Self-evaluation and self-regulation predicted academic achievement, accounting for 10% of the variance.
Njega et al.	2019	Abroad	Examine self-efficacy and academic performance among secondary students	Survey of 412 secondary students	Strong positive correlation between self-efficacy and academic performance; male students showed slightly higher self-efficacy.
Oyuga et al.	2019	Abroad	Study the role of self-efficacy among orphaned secondary students	Mixed-method study	Self-efficacy was crucial for academic performance; the study supported Social Cognitive Theory.
Sucuog	2018	Abroad	Study the correlation between socioeconomic status, self-efficacy, and academic achievement	Survey of 298 psychology students	Higher self-efficacy aligned with better academic performance; SES had an influence.
Villafana et al.	2016	Abroad	Analyze self-efficacy and performance in organic chemistry using SEM	Structural Equation Modeling (SEM)	Reciprocal growth between self-efficacy and course performance; higher self-efficacy boosted exam outcomes.

Spiritual Practices

Author(s)	Year	Location	Objective	Methodology	Findings/Summary
Akbayram & Keten	2024	Abroad	Investigate religion/spirituality and psychological health among medical students	Survey of 399 medical students	Muslims showed better psychological health; higher religious engagement increased resilience, life satisfaction, and well-being.
Berghuijs et al.	2013	Abroad	Explore new spirituality and social engagement	Survey of Dutch population	Spiritual individuals had lower social engagement than religious individuals but more engagement than secular individuals, focusing on environmental and peace causes.
Bussing et al.	2018	Abroad	Validate the Gratitude/Awe scale (GrAw-7)	Validation study with 183 participants	GrAw-7 showed strong reliability; meditation correlated with awe, while prayer was more associated with gratitude.
Dumulescu	2022	Abroad	Discuss integrating spirituality into psychotherapy	Literature review and guidelines for spiritual therapy	Spiritual practices help address existential crises and trauma recovery; guidelines for therapists included.
Hardy et al.	2019	Abroad	Review 30 years of research on how religiosity and spirituality affect adolescents	Review of 241 studies on religiosity and spirituality among adolescents	Spirituality supports well-being and positive development but can be harmful in some contexts; calls for culturally informed research.
Kim & Esquivel	2011	Abroad	Explore spirituality in adolescence and its role in well-being and academic performance	Literature review	Spirituality supports resilience, mental health, and academic performance; recommendations for nurturing spiritual development in schools.

Kurtulus et al.	2022	Abroad	Investigate how spirituality, compassion, and life satisfaction predict well-being	Survey study on spirituality, compassion, and life satisfaction	Spirituality improved well-being through compassion and emotional pathways.
McCann et al.	2020	Abroad	Review the intersection of spirituality and mental health in LGBT+ youth	Literature review	Spirituality offered support but religion often caused conflict in LGBT+ youth, impacting mental health outcomes.
Papathanasiou et al.	2020	Abroad	Study spirituality's impact on mental health in hypertensive elderly	Survey of hypertensive elderly patients	Higher spirituality correlated with improved mental health and resilience in older adults.
Prasetyo et al.	2023	Abroad	Study religious well-being and family resilience during COVID-19	Survey of families during the pandemic	Religious well-being predicted family resilience; families with strong spirituality were more resilient during COVID-19.
Strawn & Gioielli	2020	Abroad	Study boredom in prayer using theology and psychoanalysis	Theological and psychoanalytic analysis	Boredom in prayer reflects spiritual growth stages or personal barriers, with therapeutic strategies deepening engagement.
Village & Francis	2023	Abroad	Study spiritual well-being's impact on health during lockdown	Survey of Anglicans during lockdown	Spiritual well-being improved mental and physical health during lockdown; positive affect mediated health benefits.
Winzer et al.	2018	Abroad	Study Buddhist spiritual practice and happiness	Survey of Thai population	Buddhist practices such as meditation and gratitude rituals increased happiness, even after controlling for other factors.

Educational Wellbeing and Self-Efficacy

Author(s)	Year	Location	Objective	Methodology	Findings/Summary
Andretta & McKay	2020	Abroad	Explore the relationship between academic, social, emotional self-efficacy and well-being	Survey of 3,485 adolescents, bivariate and cluster analyses	Emotional self-efficacy was a key factor in well-being; five self-efficacy profiles identified, with high self-efficacy cluster showing the best outcomes.
Jain & Desai	2020	India	Examine the effect of self-efficacy on general well-being among adolescents	Survey of 100 adolescents (50 boys, 50 girls), using Self-Efficacy Scale and General Well-Being Scale	No significant gender differences; self-efficacy positively influenced adolescents' general well-being.
Jiang	2024	Abroad	Explore how music education influences academic performance and psychological well-being	Structural equation modeling of 326 Chinese university students	Music education enhances psychological well-being, which in turn boosts academic performance; self-efficacy and self-esteem mediate the effects.
Kamil & Al-Hadrawi	2022	Abroad	Examine perceived self-efficacy and psychological well-being in adolescents	Descriptive correlational design, survey of 320 adolescents	Positive correlation found between self-efficacy and psychological well-being, with most adolescents reporting fair levels of both.
Khodapanah & Tamannaeifar	2023	Abroad	Examine the relationship between academic self-efficacy, happiness, and academic well-being	Survey of 375 female students using standardized questionnaires	Significant positive correlations between academic well-being, self-efficacy, and happiness; self-efficacy was a stronger predictor of academic well-being.
Min et al.	2022	Abroad	Study the impact of self-efficacy, affective commitment, and psychological well-being on student performance	PLS-SEM analysis of 308 students in Chinese public universities	Affective commitment and psychological well-being strongly influenced student performance; self-efficacy did not significantly affect performance.

Mishra and Kulshrestha	2024	India	Explored CPS and intrinsic motivation among 390 adolescents from Uttar Pradesh.	Survey method	CPS significantly predicts intrinsic motivation, curiosity, and mastery orientation, linking CPS with motivational constructs that sustain long-term educational well-being.
Mukherjee & Banerjee	2024	India	Studied on cognitive flexibility, creativity, and well-being.	Cross-sectional	Cognitive flexibility predicts creative idea generation and emotional health, with lower flexibility linked to more distress.
Nair, Thomas & Menon	2024	India	Examined how CPS, emotional regulation, and academic well-being relate among 360 adolescents in Kerala.	Survey, mediation	A positive link was found between CPS, cognitive reappraisal, and motivation, and a negative link with academic stress. Emotional regulation partially mediated the CPS-well-being relationship,
Pandit & Kulkarni	2024	India	Studied CPS, metacognition, and educational well-being in 390 Maharashtra students.	Correlational	A strong link was found between CPS and metacognitive awareness, which boosted academic confidence and well-being, integrating metacognitive processes into CPS research in India.
Prasetyo et al.	2023	abroad	Religious well-being and family resilience during COVID-19.	Survey	Families with strong spirituality are four times more resilient. Enhancing religious well-being improves coping capacity.
Rathore & Mehta	2024	India	Studied creative problem solving and academic emotions in 400 secondary students from Gujarat.	Correlational	Positive links between CPS and academic enjoyment, and negative links with boredom and anxiety, connecting academic emotions to CPS research and relating creative thinking to students' daily educational well-being.

Sharma & Singh	2024	India	Surveyed 420 Indian secondary students to explore the link between CPS ability and psychological well-being.	Survey, correlational	Adolescents with higher CPS have better emotional balance and coping skills.
Singh et al.	2020	abroad	Investigate how teacher and peer support relate to student engagement and well-being, with self-efficacy as a mediator.	SEM analysis of 640 Chinese students	Teacher and peer support were positively linked to engagement, well-being, and self-efficacy; self-efficacy significantly predicted engagement and well-being.
Song	2024	abroad	Studied how teacher and peer support influence student engagement and well-being, with self-efficacy as a mediator	SEM analysis of 640 Chinese students	SEM results showed social support linked to higher engagement, well-being, and self-efficacy. Self-efficacy also predicted both engagement and well-being.
Srivastava & Yadav	2024	India	Analyzed the predictive role of CPS in psychological flourishing among 410 secondary school students in Uttar Pradesh.	Survey	CPS significantly predicts positive emotions, engagement, and a sense of accomplishment, thereby expanding CPS research to include flourishing frameworks and positive psychological growth.
Upadhyay & Mishra	2024	India	Studied 154 mathematics students using SEM to examine self-efficacy,	Survey	Learning barriers negatively affected self-efficacy, which positively influenced achievement. Students with fewer barriers had stronger creative problem-solving skills.

			learning barriers, and performance.		
Valentina et al.	2022	Abroad	Link self-efficacy with well-being in Indonesian youth	Survey-based study	Education improved well-being; self-efficacy explained 33.5% of the variance in well-being; gender had no significant effect.
Verma & Tiwari	2024	India	Studied 450 Uttar Pradesh secondary students, linking CPS to academic and emotional well-being.	Survey	Higher CPS tied to better emotional stability, less academic anxiety, and more classroom engagement.

Educational Wellbeing and Spiritual Practices

Author(s)	Year	Location	Objective	Methodology	Findings/Summary
Aggarwal et al.	2023	Abroad	Examine religiosity/spirituality's impact on depression and anxiety among youth	Review of 45 longitudinal and 29 intervention studies	Spiritual well-being protects against depression, while negative religious coping increases depressive symptoms. Religious/spiritual interventions are generally helpful, but study quality was low.
Amiri et al.	2019	Abroad	Explore health-promoting lifestyle, self-efficacy, and well-being in university students	Survey of 500 university students, using health and self-efficacy scales	Significant positive correlations found between self-efficacy, well-being, and healthy behaviors; curriculum improvements recommended.
Bottomley et al.	2023	Abroad	Study how belonging influences well-being among physics students	Survey of 310 physics students	Women reported lower physics identity and self-efficacy; for men, belonging predicted well-being more than self-efficacy. Gender differences were observed in how belonging shapes well-being.

Gupta & Sharma	2024	India	Investigated CPS, emotional resilience, and subjective well-being among 420 secondary school students from Rajasthan.	Survey	CPS significantly predicts emotional resilience, which mediates positive affect and life satisfaction, thereby establishing emotional resilience as a vital psychological link between CPS and well-being.
Heiman & Olenik-Shemesh	2020	Abroad	Study how social support links loneliness, self-efficacy, and well-being in students	Survey of 834 students	Support mediated relationships among loneliness, emotional factors, and well-being; girls without learning disabilities had higher self-efficacy and well-being.

Creative Problem Solving and Self-efficacy

Author(s)	Year	Location	Objective	Methodology	Findings/Summary
Baity et al.	2021	Abroad	Examine effects of creative problem-solving models, motivation, and self-efficacy on mathematical problem-solving	Experimental study with 70 students	Creative problem-solving model improved performance more than conventional learning; best outcomes in students with high motivation and moderate self-efficacy.
Supandi et al.	2021	Abroad	Examine self-efficacy, learning barriers, and academic performance in mathematics education	SEM analysis of 154 students	Learning barriers negatively affected self-efficacy; self-efficacy positively influenced academic achievement and creativity.
Supriatna & Septian	2021	Abroad	Examine relationship between religiosity, spirituality with wellbeing.	Survey of students in Indonesia during COVID-19	Both religiosity and spirituality are positively linked to student well-being, with religiosity exerting a relatively stronger influence.
Yousuf & Rahmani	2024	India	Studied meaning-oriented spirituality and adaptability in 330 urban adolescents.	Survey	The survey showed that meaning in life predicts creative adaptability and problem-solving, emphasizing existential meaning as a cognitive-emotional basis for CPS.

Thakur & Chauhan	2024	India	Studied CPS, goal orientation, and academic well-being among 400 students in Himachal Pradesh.	Correlational	Their correlational study found positive links between CPS, mastery goal orientation, and persistence, with higher CPS associated with greater satisfaction and less fear of failure, highlighting motivational goal structures in educational well-being.
Wulandari & Asikin	2019	Abroad	Evaluate the effect of the CPS model on problem-solving ability and self-efficacy	Study of eighth graders	CPS model significantly improved problem-solving and learning quality; high-performing students had stronger self-efficacy and problem-solving skills.
Kumari & Prasad	2024	India	Studied CPS's role in academic engagement among 400 students in Jharkhand.	Survey	CPS predicts behavioral, emotional, and cognitive engagement, boosting educational well-being.
Wulantri	2020	Abroad	Assess the impact of creative-inquiry-based student worksheets on self-efficacy and problem-solving	Quasi-experimental study with 12th graders	Creative-inquiry worksheets improved self-efficacy and problem-solving in physics, outperforming commercial materials.
Yuliani et al.	2019	Abroad	Investigate the relationship between mathematical creative problem-solving ability and self-efficacy	Study of 25 eighth graders	No significant relationship found between self-efficacy and problem-solving; suggests self-efficacy alone does not guarantee strong creativity-based problem-solving skills.
Kulshreshtha & Jain	2024	India	Studied CPS, self-efficacy and education wellbeing among 360 Rajasthan students.	Correlational, mediation	CPS ability predicted self-efficacy, which reduced academic stress. Mediation analysis confirmed self-efficacy as a key mediator.

Self-efficacy and Spiritual Practices

Author(s)	Year	Location	Objective	Methodology	Findings/Summary
Carter	2022	Abroad	Explore how spiritual models shape traits (spirituality, mindfulness, forgiveness, hope) and contribute to self-efficacy	Survey of 384 students from Christian and public universities	Traits mediated the link between spiritual support and self-efficacy. Perspective-taking did not moderate the relationship, reinforcing Lent's model.

Appendix- K

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CREATIVE PROBLEM-SOLVING ABILITY AND EDUCATIONAL WELLBEING AMONG SCHOOL-GOING ADOLESCENTS: THE MEDIATING EFFECTS OF SELF-EFFICACY AND SPIRITUAL PRACTICES

By Bikash Chandra Ghorai

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