

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

**The Synopsis Submitted to  
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## **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 summarised 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.

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## **1.0. Chapter-I: 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.

## **2.0. Chapter-II: Review of Related Literature**

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 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. Area- wise List of the Selecting 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

### **3.0. Chapter-III: Problem Statement**

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<sub>01</sub>:** 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<sub>02</sub>:** 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<sub>03</sub>:** 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<sub>04</sub>:** 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<sub>05</sub>:** There is no significant relationship among creative problem-solving ability, educational wellbeing, self-efficacy, and spiritual practices among school-going adolescents.

**H<sub>06</sub>:** Self-efficacy does not significantly influence creative problem-solving ability among school-going adolescents.

**H<sub>07</sub>:** Spiritual practices do not significantly influence creative problem-solving ability among school-going adolescents.

**H<sub>08</sub>:** There is no significant combined effect of self-efficacy and spiritual practices on creative problem-solving ability among school-going adolescents.

**H<sub>09</sub>:** Self-efficacy does not significantly influence educational wellbeing among school-going adolescents.

**H<sub>010</sub>:** Spiritual practices do not significantly influence educational wellbeing among school-going adolescents.

**H<sub>011</sub>:** There is no significant combined contribution of self-efficacy and spiritual practices in predicting educational wellbeing among school-going adolescents.

**H<sub>012</sub>:** Creative problem-solving ability does not significantly influence educational wellbeing among school-going adolescents.

**H<sub>013</sub>:** 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<sub>014</sub>:** Self-efficacy does not significantly mediate the relationship between creative problem-solving ability and educational wellbeing among school-going adolescents.

**H<sub>015</sub>:** Spiritual practices do not significantly mediate the relationship between creative problem-solving ability and educational wellbeing among school-going adolescents.

**H<sub>016</sub>:** 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:

- I. **Independent Variables:** Demographic Factors, CPSA, SE, and SP.
- II. **Dependent Variables:** SE, SP, CPSA, and EW.
- III. **Mediating Variables:** SE and SP

#### **3.8.1. Theoretical Links:**

- A. ***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.
- B. ***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.
- C. ***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.
- D. ***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.
- E. ***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.
- F. ***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:

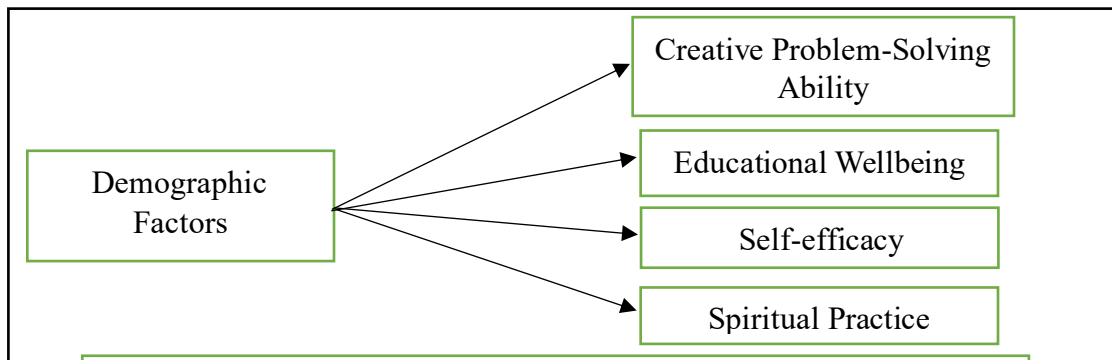


Fig.3.1. Visual Representation Hypothesized Relationship

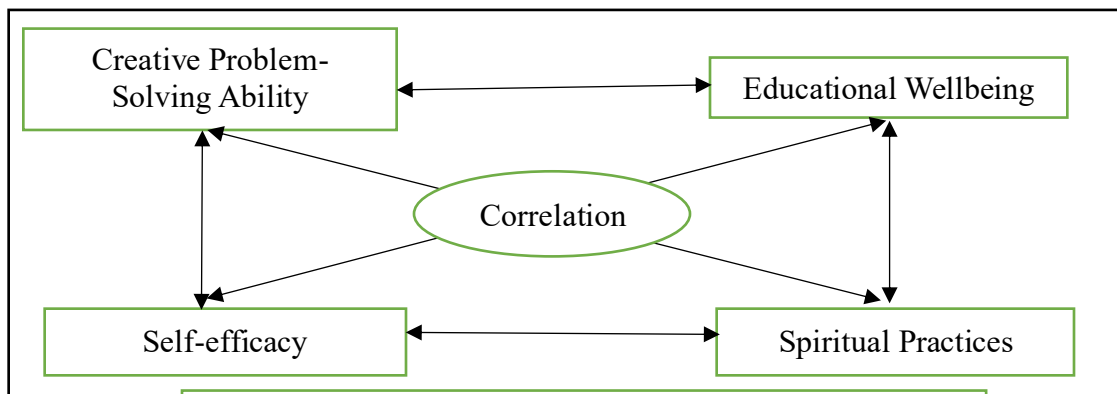


Fig. 3.2. Conceptual Framework of Correlation

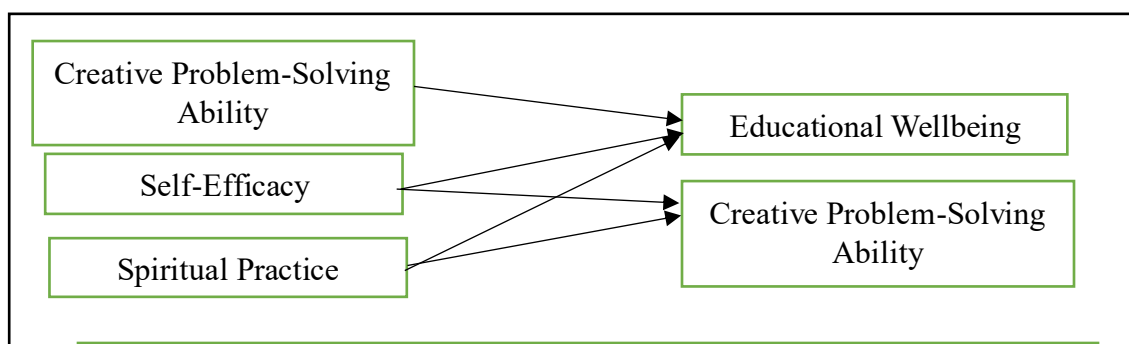


Fig. 3.3. Influences of Independent variables on Dependent Variables

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 EW [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:

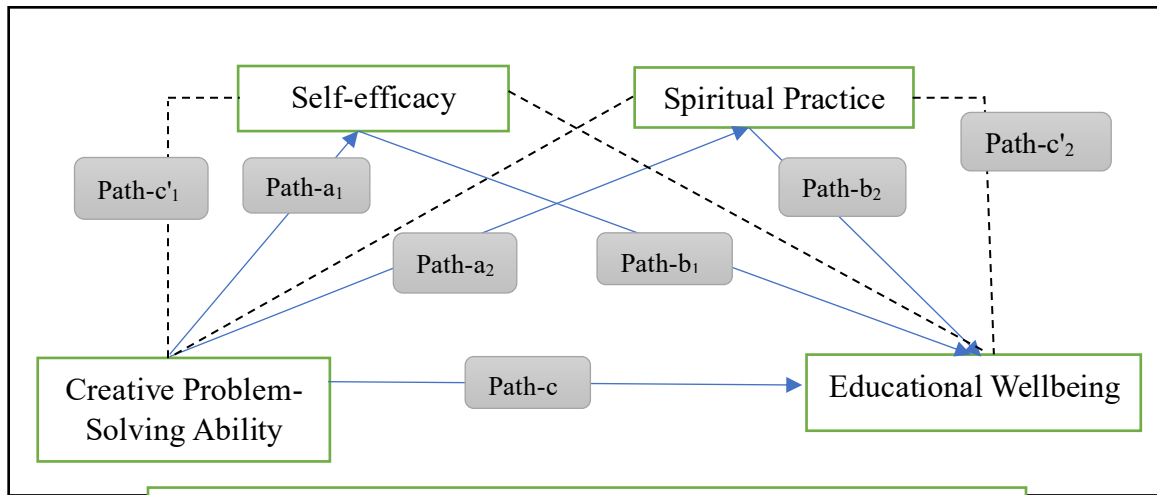


Fig. 3.4. Conceptual Frame Work of the Study (Path Analysis)

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.

#### 4.0. Chapter-IV: Methodology of The Study

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 of the Study

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.

### **4.3. Participants of the Study**

#### **4.3.1. Population**

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).

***Table No. 4.1 Distribution of the Total Population of Two Districts in West Bengal***

<b>Purba Medinipur</b>	<b>Paschim Medinipur</b>	<b>Total</b>
117,500	104,900	222400

Source: School D.I Office, Govt. of W.B.

### 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 4.2 displays the formula provided by Krejcie and Morgan (1970).

**Table 4.2. The Sample Size Determination Formula**

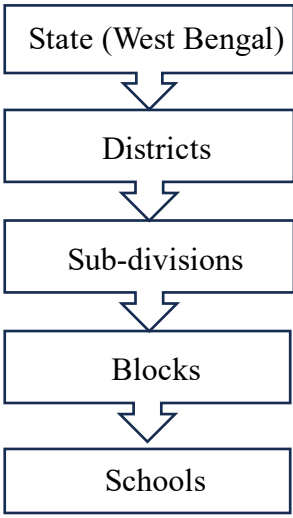
$S = \frac{X^2 N P (1-P)}{d^2 (N-1) + X^2 P (1-P)}$ <p>‘Where: S= Sample size X<sup>2</sup> = Chi-square value for 1 degree of freedom at the desired confidence level (3.841 at 95% confidence) N = Population (1274036) P = population proportion (assumed to be 0.5 for maximum variability) d<sup>2</sup> = margin of error (0.05)’</p>
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### 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 4.3). 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 4.3. Showing Sampling Procedure**

Selection	Sampling Technique	Process
Schools	Multistage Convenience Sampling	 <pre> graph TD     A[State (West Bengal)] --&gt; B[Districts]     B --&gt; C[Sub-divisions]     C --&gt; D[Blocks]     D --&gt; E[Schools]           </pre>
Participants	Simple Random sampling	Lottery

**Table 4.4. 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 4.5. 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	Father's Educational Qualification of the Participant	Up to Class Eight	233	32.4	720
		Class Nine and Ten	209	29.0	
		Class Eleven and Twelve	177	24.6	
		Above Class Twelve	101	14.0	
7		Up to Class Eight	250	34.7	720

	Mother's Educational Qualification of the Participant	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 4.6. The Reliability and Validity Coefficients for the Creative Problem-Solving Test**

<b>Scale</b>	<b>Reliability Coefficients</b>	<b>Validity</b>
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 4.7 shows the total points for each scale item by factor.

**Table 4.7. Factors-wise Total Points of Each Item**

<b>Factor 1</b>	<b>Factor 2</b>	<b>Factor 3</b>	<b>Factor 4</b>	<b>Factor 5</b>
-----------------	-----------------	-----------------	-----------------	-----------------

Nature		Objects		Lines		Fantasy		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 4.8. Levels of Creative Problem-Solving Ability**

SI 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 4.9.

**Table 4.9. Details of the Scale Standardisation**

Stage	Description				
Conceptualisation and Construct Definition	Define the construct(s) to be measured based on theory and literature.				
Planning and Item development	Based on the previous literature and theories, 203 pool items were initially developed.				
Review and scanning	The researcher, with his guide, initially checked the items and selected 165 items.				
Preliminary Expert Review	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.				
Second Expert Review	The researcher sent questionnaires to eight subject experts, and 51 items were selected based on their opinions.				
Primary Try-out	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.				
Second Try-out	Second try out was conducted on 700 students (11 <sup>th</sup> grade) of Paschim Medinipur in West Bengal, India. Based on Factor analysis (EFA) researcher selected 28 items.				
	Item	communalities	Rotation Loading	Mean	SD
	28	0.529<	60.266	107.81	11.24
Check Reliability and Validity	28	Reliability		Validity	
		Cronbach's Alpha		Content Validity	

**Table 4.10. 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*

	<b>Strongly agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly disagree</b>
Positive Item	5	4	3	2	1
Negative Item	1	2	3	4	5

**Table 4.11. Level of Educational Wellbeing According to NPC Norms**

Sl. No	Score Range	Z scores	Level of EW
1	Upto 87	-3 $\sigma$ to -1.8 $\sigma$	Very Low EW
2	88 to 101	-1.8 $\sigma$ to -0.6 $\sigma$	Low EW
3	102 to 115	-0.6 $\sigma$ to +0.6 $\sigma$	Average EW
4	116 to 128	+0.6 $\sigma$ to +1.8 $\sigma$	High EW
5	129 and above	+1.8 $\sigma$ to +3 $\sigma$	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 4.12.

***Table 4.12. The Reliability and Validity Coefficients for the Self-Efficacy Scale***

<b>Studies</b>	<b>Reliability</b>	<b>Validity</b>
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***

	<b>Strongly agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly disagree</b>
<b>Positive Item</b>	5	4	3	2	1
<b>Negative Item</b>	1	2	3	4	5

***Table 4.13. Level of Self-Efficacy According to NPC Norms***

<b>Sl. No.</b>	<b>Score Range</b>	<b>z-Scores Range</b>	<b>Level of Self-Efficacy</b>
1	Up to 62	-3 $\sigma$ to -1.8 $\sigma$	Very Low EW
2	63 - 72	-1.8 $\sigma$ to -0.6 $\sigma$	Low EW

3	73 - 83	-0.6 $\sigma$ to +0.6 $\sigma$	Average EW
4	84 – 93	+0.6 $\sigma$ to +1.8 $\sigma$	High EW
5	94 and above	+1.8 $\sigma$ to +3 $\sigma$	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

***Table 4.14. The Reliability and Validity Coefficients for the Spiritual Practices Scale***

<b>Studies</b>	<b>Reliability</b>	<b>Validity</b>
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*

	<b>Never</b>	<b>Seldom</b>	<b>Often</b>	<b>Regularly</b>
Item	0	1	2	3

**Table 4.15. Level of Spiritual Practices according to NPC**

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

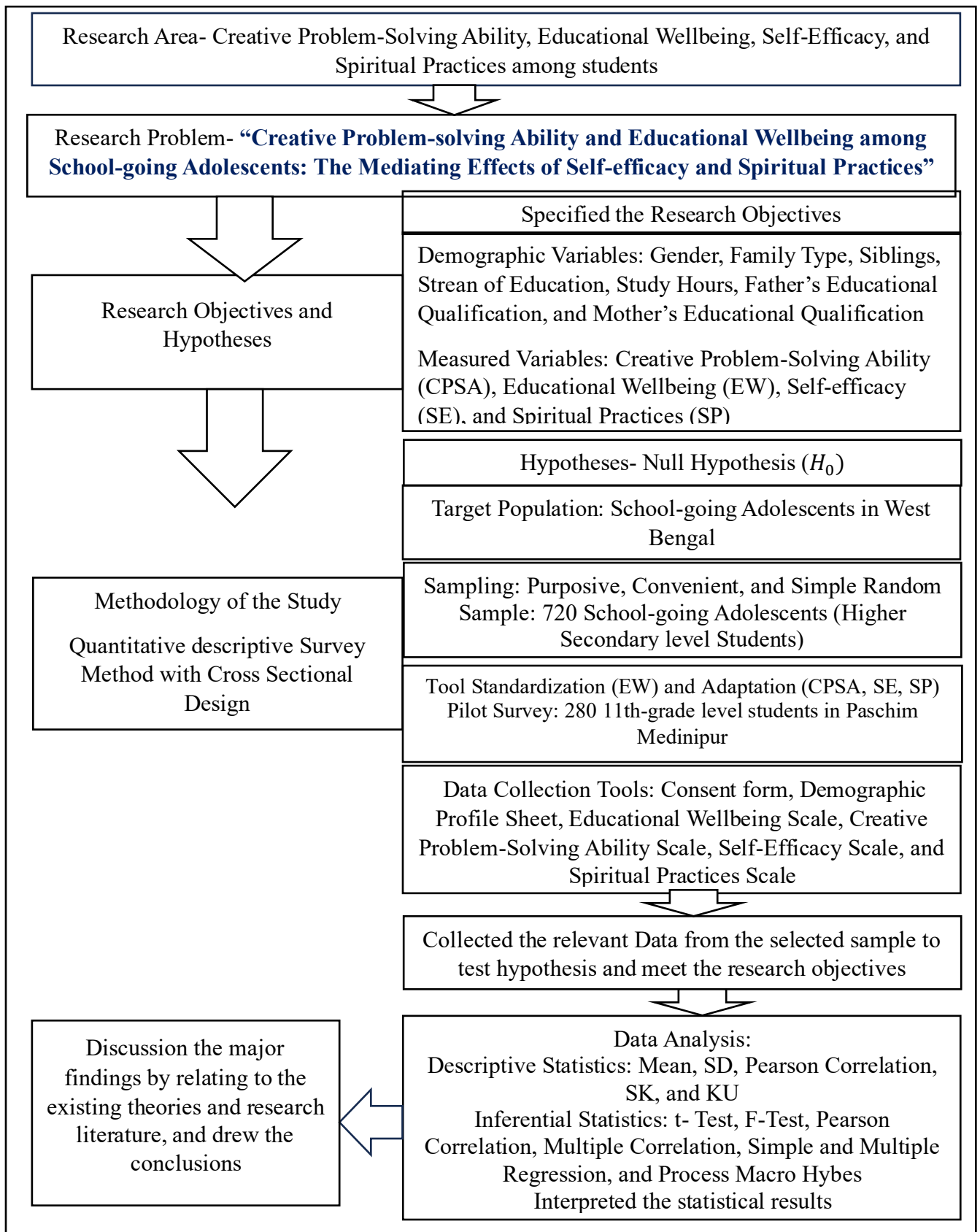


Fig. 4.2. Research Design

#### 4.10. Analysis Designs

##### 4.10.1. Factorial analysis design relating to objective- 3

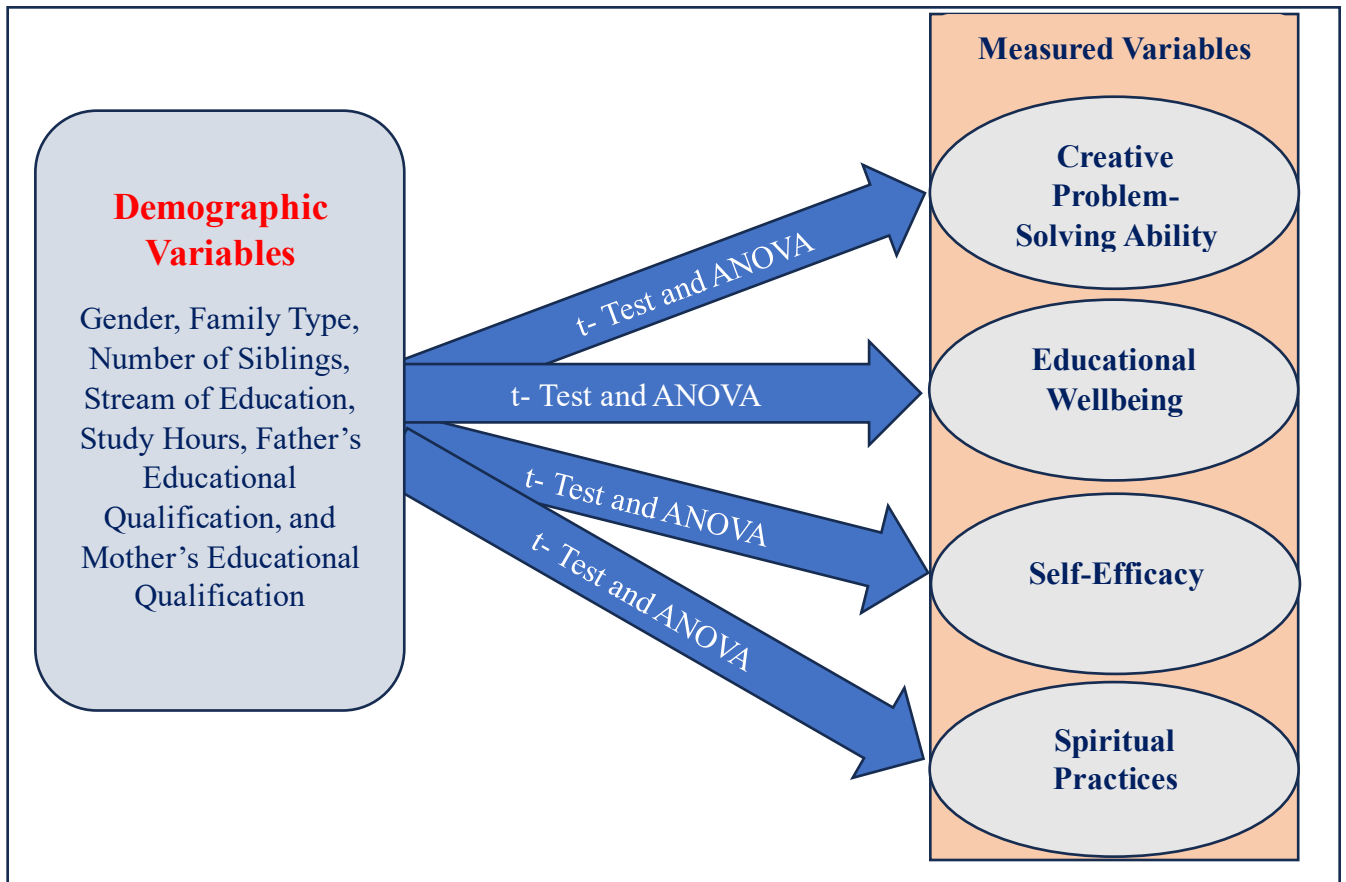


Fig. 4.3. Factorial Analysis Design Relating to Demographic Variables Varies on CPSCA, EW, SE, and SP

##### 4.10.2. Factorial analysis design relating to objective- 4

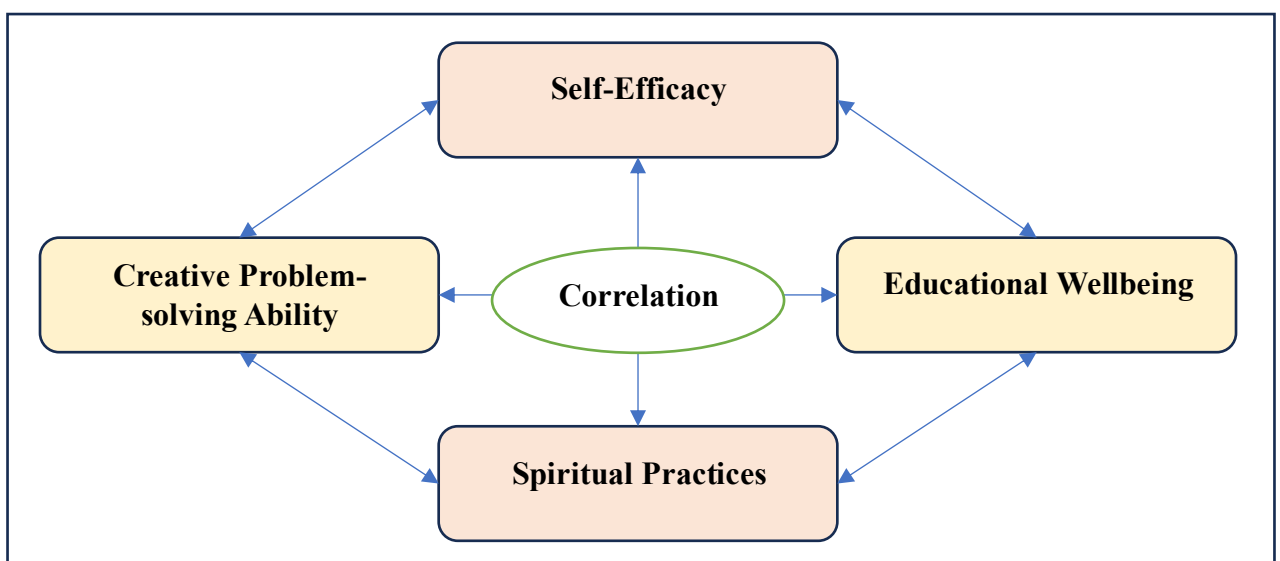


Fig 4.4. Factorial Analysis Design Relating to Linear Correlation among CPSA, EW, SE, and SP

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

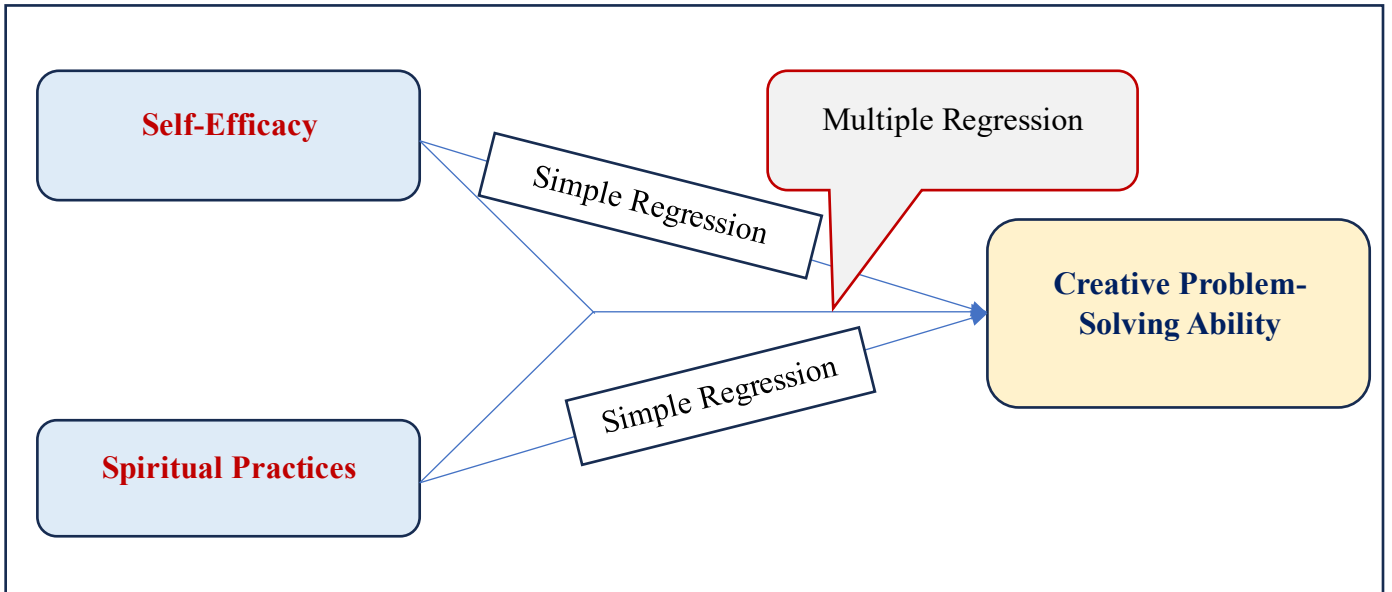


Fig. 4.5. Factorial Analysis Design Relating to Regression of SE and SP on CPSA

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

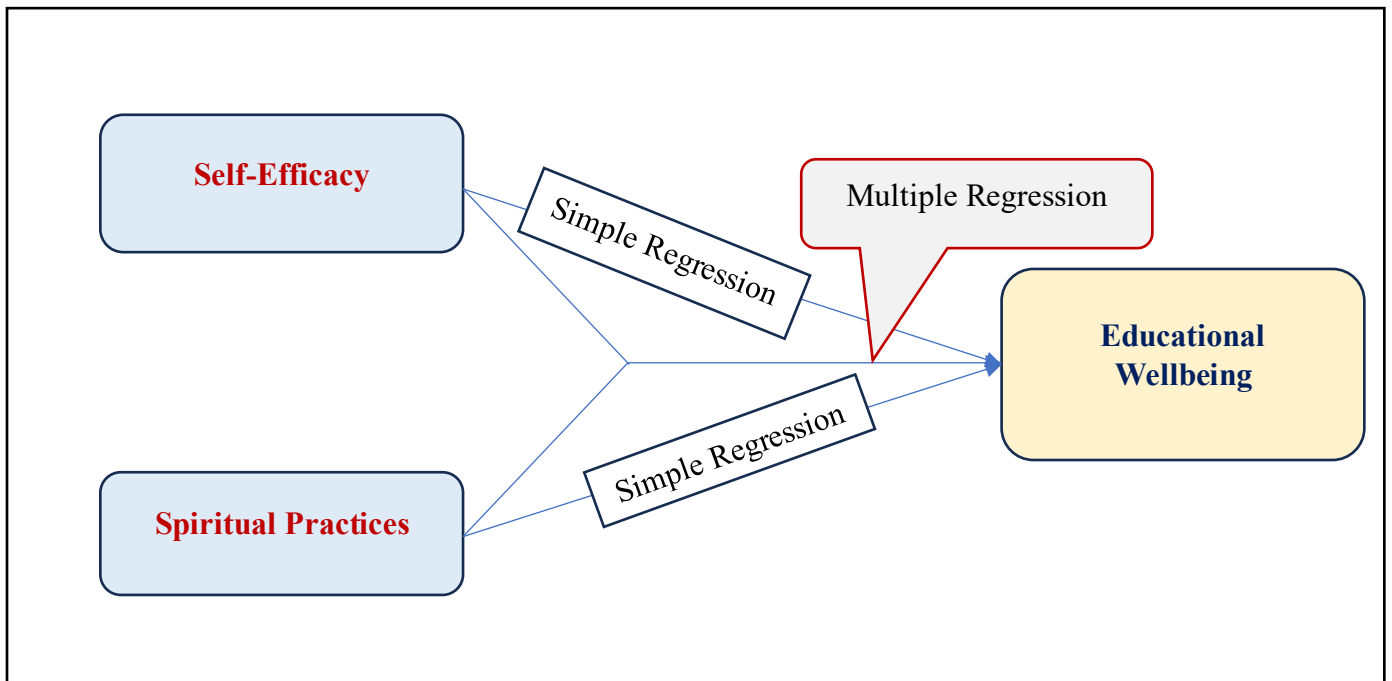


Fig. 4.6. Factorial Analysis Design Relating to Regression of SE and SP on EW

**4.10.5. Factorial analysis design relating to objective- 11**

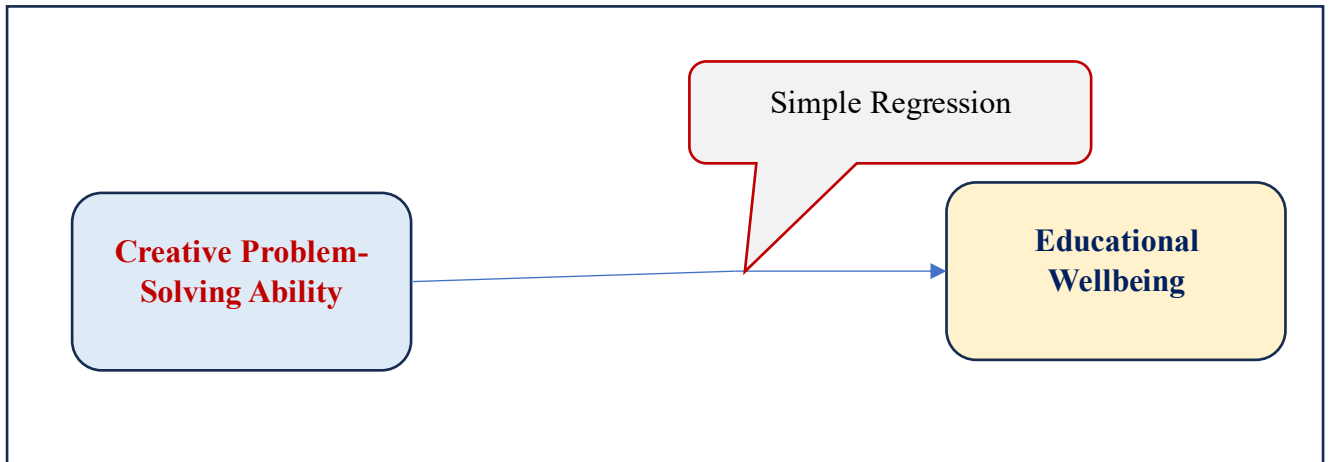


Fig. 4.7. Factorial Analysis Design Relating to Regression of CPSA on EW

**4.10.6. Factorial analysis design relating to objective- 12**

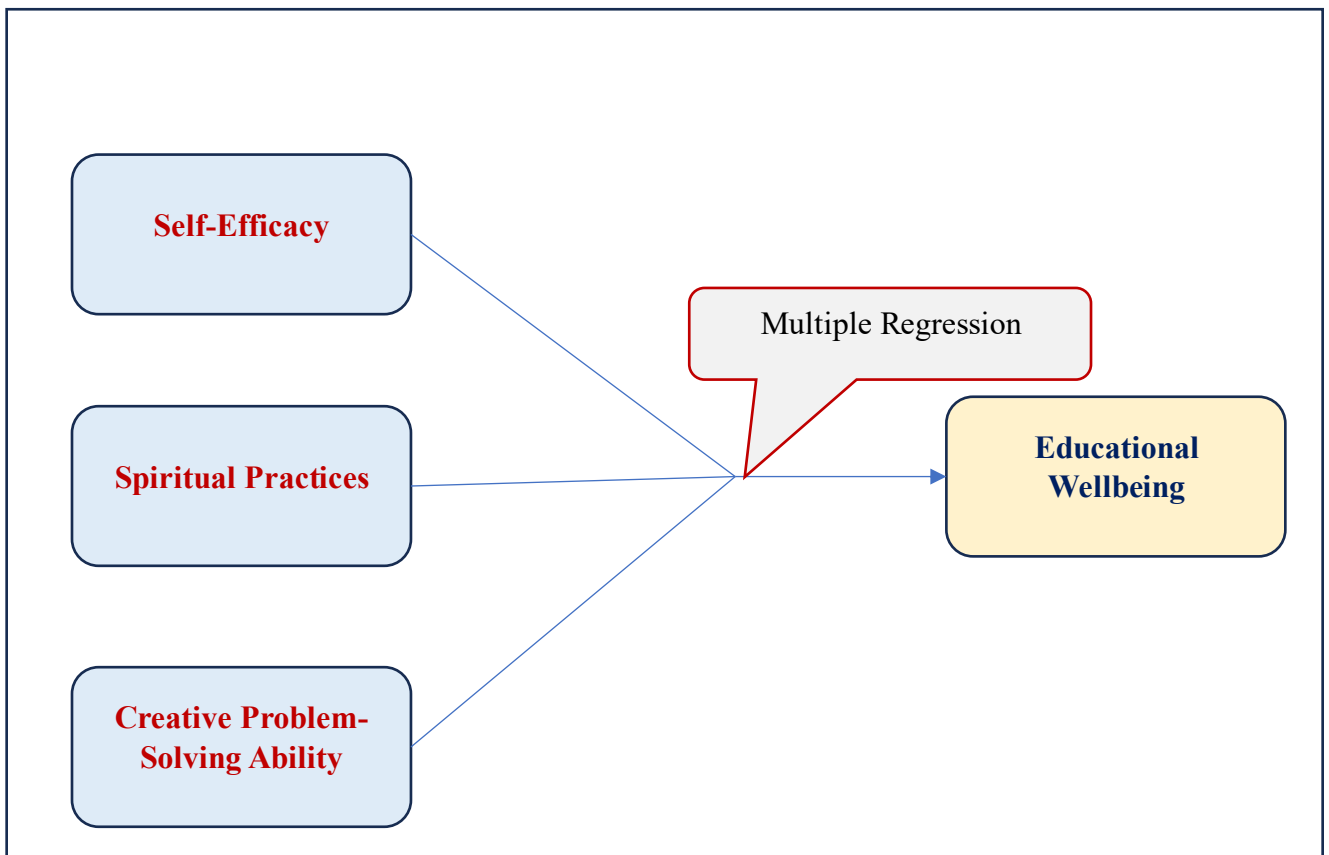


Fig. 4.8. Factorial Analysis Design Relating to Regression of CPSA, SE, and SP on EW

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

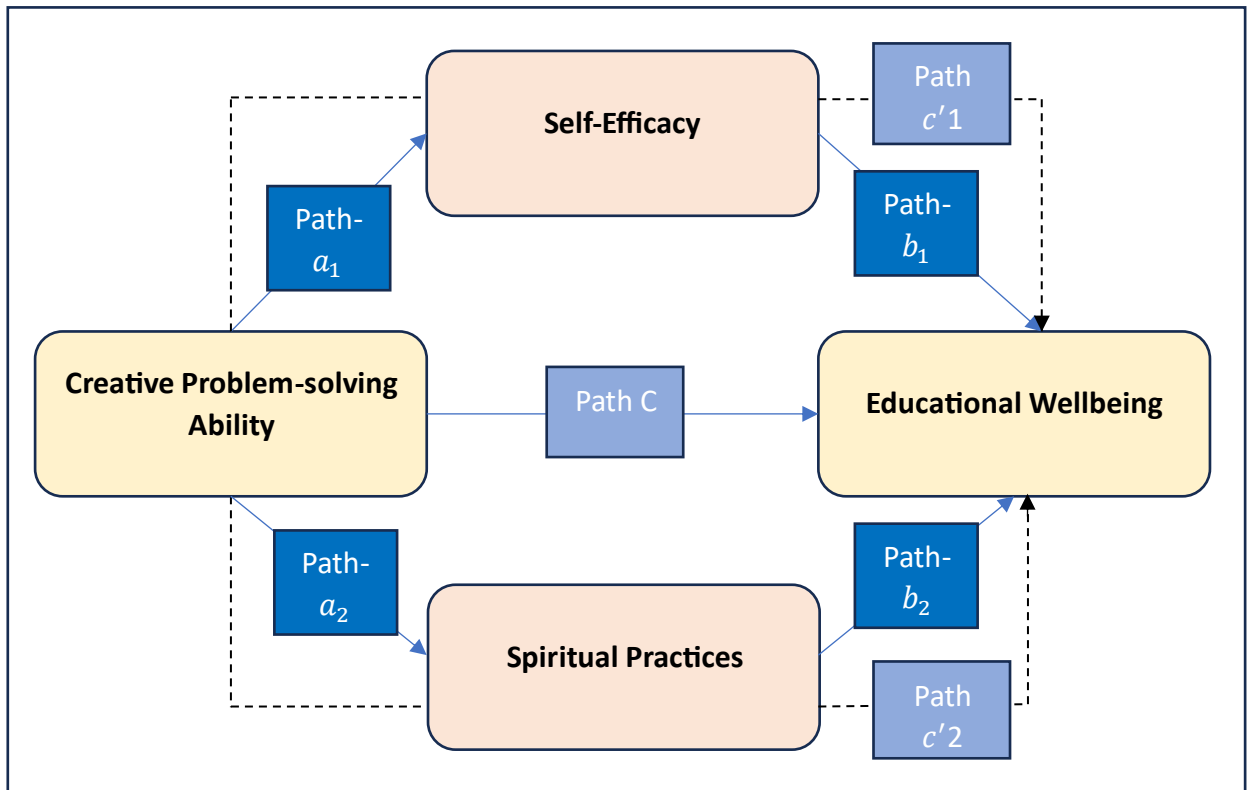


Fig. 4.9. Factorial Analysis Design Concerning the Mediating Effects of SE and SP in the Relationship between CPSA and EW

## 5.0. Chapter- V: Analysis and Interpretation of The Data

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

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

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.

### **Gender-wise Data Normality Test of Creative Problem-Solving Ability, Educational Wellbeing, Self-Efficacy, and Spiritual Practices**

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.

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

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  $\pm 1$  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.

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

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  $\pm 1$  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.

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

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 ( $\pm 1$  for skewness and  $\pm 1$  to  $\pm 2$  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.

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

Across all study-hour categories, the skewness and kurtosis values for CPSA, EW, SE, and SP fall within acceptable limits for normality (skewness within  $\pm 1$  and kurtosis within  $\pm 1$  to  $\pm 2$ ). 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.

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

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  $\pm 1$  and kurtosis within  $\pm 1$  to  $\pm 2$ ). 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.

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

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  $\pm 1$  and kurtosis within  $\pm 1$  to  $\pm 2$ ). 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.

### **6.0. Chapter-VI: Major Findings and Conclusion**

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.A.
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 Effect 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 Effects 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 Effects 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 Effect 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 Spiritual Practices 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 Effects 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 effects 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.

### **6.3. 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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