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STREAM in Science Education: Challenge to Enhance Creative ThinkingSkills and Spiritual Quotient for Society 5.0

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Abstract

Society 5.0 leads to the demands of the enhancing creative thinking skills and spiritual quotient (SQ) to prepare for the complexity and dynamics of the digital era. The research aims to study the profile of science education on sustainablelifestyle theme based on Science, Technology, Religion, Engineering, Art, and Mathematics (STREAM) and its impact to creative thinking skills and spiritual quotient (SQ) of senior high school students. The study was conducted using a quasi-experimental method involving 329 students from grades XI and XII across 10 Islamic-based high school education units in Sukabumi Regency and Sukabumi City representing 33 schools. analysis of covariance (ANCOVA) was used to control covariate variables and see the effect of the STREAM approach on increasingcreative thinking skills and SQ. The instruments used were observation format, creative thinking skills test questions and SQ questionnaires. The subjects of the study were determined on using probability cluster sampling technique. Although this model is the first time being implemented, STREAM learning provides the mutual learning so that it impacts to the increasing students' critical thinking skills (although with low category) and increasing students' SQ (high category). To make a significant impact especially in creative thinking skills, it is recommended that STREAM learning or other contemporary learning approaches often used in science learning for habituation learning process.

Keywords: Creative thinking skills, science education, society 5.0, spiritual quotient

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Introduction

The current development of science and technology has many significantconsequences for global society. The industrialrevolution 4.0, with all the technological innovations it brings, not only producesefficiencies in production and services, butalso raises new challenges that have neverhappened before (Sa, 2020). One of the most striking impacts is the birth of a massive information tsunami, where the amount of datagenerated and accessed by humans surpasses anything we have ever experienced before (Gladden, 2019). This is changing the information landscape drastically, bringing usto an era where access to knowledge is almostunlimited. While technology is becoming more sophisticated and pampering people withcomfort and convenience, these changes are also changing people's life orientation fundamentally (Atsushi Deguchi C. H., 2019).Society is not only faced with technological challenges, but also faced with immoral social,

economic and cultural changes (Hideyuki Matsuoka, 2019). In response to these changes, the concept of "Society 5.0" emerged,marking the evolution of society towards closer integration between humans and technology, with a focus on leveraging technology to improve the quality of life and overall human well-being (Deguchi, FromSmart City to Society 5.0: Integrating IT into Urban Planning to Smartify Cities, 2019). In this context, society is faced with new demands to adapt, learn and developcontinuously to remain relevant andproductive in an increasingly technologically advanced era (Atsushi Deguchi S. K., 2019). Society 5.0 is characterized by the integration of advanced technologies such as artificial intelligence, robotics, Internet of Things (IoT),and cloud computing to improve the quality ofhuman life (Deguchi, From Smart City to Society 5.0, 2019). However, in addition to technological advances, the success of Society 5.0 also relies heavily on the development of human skills, especially in terms of creativity and spiritual intelligence (SQ).

Education in the current era can nolonger rely on old methods and curricula. Along with technological advances and rapid changes in society, education must continue todevelop and adapt to the demands of the times.Setting clear standards in education is very important, and within the 21st Century Education framework, there is a set of literacy, competency and character foundations that areconsidered essential for students (Faulinda Ely Nastiti, 2019).

Literacy foundations include six literacy skills that students must have. First, literacy which includes the ability to read, write and understand texts well. Second, numeracy, which involves a strong understanding of mathematical concepts and the ability to use numbers effectively in avariety of contexts (Anna Shapiro, 2024).Third, scientific literacy, where students are expected to have a deep understanding of scientific concepts and the skills to observe, investigate and solve scientific problems. Fourth, ICT (Information and CommunicationTechnology) literacy, which involves theability to use information and communication technology effectively to search for, evaluate and present information. Fifth, financial literacy, which involves an understanding of personal finance and the ability to make wise financial decisions (Sunaina Shenoy, 2024). Lastly, socio-cultural literacy, where studentsare expected to have a deep understanding of different societies and cultures as well as the ability to interact positively in a multicultural environment (Goel, 2022).

Apart from literacy foundations, there are four competencies that are considered important for students (Cyrille Feybesse, 2023). First, critical thinking or problem solving, where students are expected to have the ability to analyze, evaluate, and solve complex problems (Moirano, 2023). Second,

creativity, which involves the ability to think creatively, generate new ideas, and innovate. Third, communicative, where students are expected to be able to convey ideas and information clearly and effectively in various formats and contexts. fourth, collaborative, which involves the ability to work together in teams, listen to and respect other people's points of view, and achieve common goals (Peter Ellerton, 2022).

Creativity is becoming an increasingly vital aspect in preparing individuals for success in a future world of work that continues to change and demands innovation (Vrije, 2020). In an era where complex challenges continue to emerge, creativityprovides opportunities to find innovative and effective solutions (Insights, 2024). The ability to think creatively allows a person to see problems from different points of view andcreate unconventional solutions (Regina Moirano, 2020). This opens the door to innovation that can change the way we work, interact and live our daily lives (N P Panigrahy, 2020).

The importance of creativity in the world of work lies in its ability to provide alternative solutions that are fresh and effective in solving problems (SoilaLemmetty, 2020). In the midst of the complexity of the problems faced, the ability to think creatively allows individuals to see opportunities where others see obstacles (Yi Jiang, 2021). Innovation triggered by creativity also brings great benefits in meetingthe demands of change and development in society (Matthias Baer, 2020). By thinking outside the box, creative individuals are able toproduce bold and revolutionary ideas that theymay have never thought of before.

Apart from that, creativity also provides a unique personal touch to the work produced. Through experimentation andexploration, creative individuals can add distinctive ornaments that differentiate their work from others (Li Hui, 2021). This not only increases the aesthetic value of the work, but also creates a more memorable experience for the user or consumer.

In evaluating creative thinking skills, there are four main indicators that are often used. First, fluency, which refers to the ability to produce many ideas or solutions in a short time. Second, flexibility, which measures the ability to think about ideas from various perspectives or different points of view. Third, originality, which reflects how unique or unusual an idea or solution is. And finally, elaboration, which refers to the ability to develop ideas in more detail or depth (John E. Sawyer, 2020). By mastering these skills, a person can become more effective in expressing their creativity and making meaningful contributions in a variety of professional and personal contexts (Daniels, 2024).

Spiritual intelligence plays an important role in forming strong and quality character (Palmer, 2020). In the midst of the flow of information and technological advances, spiritual intelligence provides a deep foundation for individuals to understand the meaning of life, ethical values, and their relationship with others and the universe (Delaney, 2021). Students who have developed spiritual intelligence will tend to produce individuals who exude noble values, such as empathy, kindness and calmness in facing life's challenges (Anderson, 2022).

Spiritual intelligence, as identified by Zohar and Marshall, can be evaluated through a number of indicators that highlight the quality and depth of a person's spiritual understanding (Lee, 2023). One indicator is self-awareness, which reflects a person's ability to understand and recognize themselves clearly, including their strengths, weaknesses, and the values that underlie their behavior. Apart from that, the ability to create meaning and purpose in life is also an important

indicator, showing the depth of a person's understanding of the direction and purpose of their life (Garcia, 2024).

Furthermore, spiritual intelligence is also reflected in the ability to connect deeply with other people and the universe. This includes the ability to feel and understand the feelings and needs of others, as well as to establish meaningful relationships and build closeness with nature. Apart from that, appreciation for the wonder and beauty of nature is also an important indicator ofspiritual intelligence, showing a sense of connectedness and awe towards the life aroundus.

Moral and ethical awareness is also an important aspect of spiritual intelligence (Thompson, 2020). The ability to differentiate between good and bad, as well as to act in accordance with underlying moral values, indicates high moral maturity and strong character integrity. Additionally, the ability toforgive and feel grateful is also a significant indicator of spiritual intelligence, indicating the ability to transcend egoism and practice compassion and forgiveness (Williams, 90- 105). By having developed spiritualintelligence, students not only become better atacademics, but also at forming strong characters and morals that will help them facelife's challenges wisely and compassionately (Clark, 2022). This has a broad positive impact, both for individuals and for society asa whole, because they bring noble and inspiring values to their interactions and contributions to the world (Edwards, 2023). Inthis context, education has a very important role in preparing individuals to face the challenges and opportunities presented by Society 5.0. One educational approach that is increasingly receiving attention is the STREAM (Science, Technology, Engineering, Arts, Mathematics) approach, which combines science, technology and mathematics with artsand engineering (O'Reilly, 2024).

The STREAM approach recognizes theimportance of not only technical skills, but also creative and critical thinking skills (Patel,2020). By integrating art and religion into the STEM

(Science, Technology, Engineering, Mathematics) curriculum, this approach encourages students to develop the ability to think creatively, solve problems, collaborate and innovate (Reynolds, 2021). Theinnovative learning approaches in STREAM, such as problem-based and project-based, provide opportunities for students to develop their creative thinking skills in a holistic way (Kumar, 2022). By considering daily contextsand religious values, students are expected to be able to create innovative solutions to the complex challenges they face, including within the scope of society 5.0 which demandsadaptability and creative problem solving (Garcia M. E., 2023).

However, so far there is still a lack of understanding about how the STREAM approach can specifically improve creative thinking skills and spiritual intelligence (SQ) in the context of Society 5.0. Therefore, this article aims to investigate why the STREAM approach is necessary in improving these skills, as well as its impact in preparing individuals to become productive and competitive members of Society 5.0 (Chen, 2024).

Methods

This research uses a quasi-experimentaldesign to test the effectiveness of the STREAM approach in improving students' creative thinking skills and spiritualintelligence (SQ). This study involved 329 students from grades XI and XII across 10 Islamic-based high schools in the Sukabumi regency and city, selected to represent various economic backgrounds. These schools were chosen from a total of 33 Islamic-based high schools using purposive sampling to ensure representation from schools in the low, middle, and high economic categories. The focus of this research is to assess students' creative thinking skills and Spiritual Quotient (SQ), emphasizing the development of creativity and spiritual quotient within the context of Islamic-based education. The participants were selected based on their active involvement in learning activities, without separating the data by gender, as this aspect is not the primary focus of the analysis. This research was carried out in several stages, starting with preparation whichincluded preparing a STREAM-based learning and developing testing the validity of creativethinking question instruments and the SQ questionnaire. Next, a pretest was carried out to measure students' creative thinking skills and SQ before implementing the STREAM approach. Learning using the STREAM approach was then applied in the experimental class, while the control class carried out learning using conventional methods. After that, a posttest was administered to measure changes in students' creative thinking skills and SQ.

The research instruments used include creative thinking questions in the form of essays that measure fluency, flexibility, originality and elaboration, as well as a spiritual intelligence (SQ) questionnaire with statements measured using a Likert scale that includes self-awareness, vision of life, andrelationships with God and others. The data collected was analyzed through

testing thevalidity and reliability of the instrument usingfactor analysis and Cronbach's Alpha coefficient, descriptive analysis to calculate the average, standard deviation, and frequency distribution of pretest and posttest results, as well as the t test to test the difference in averages between the experimental and experimental groups. control. In addition, analysis of covariance (ANCOVA) was used to control covariate variables and see the effect of the STREAM approach on increasingcreative thinking skills and SQ. Data collection was carried out by a research team that had been trained to ensure data consistency and accuracy. With this method, itis hoped that a comprehensive picture can be obtained regarding the effectiveness of theSTREAM approach in improving students' creative thinking skills and spiritualintelligence.

Results and discussion

Results of Creative Thinking Skills Questions

The instrument of creative thinking questions is designed to include religious values, including verses from the Quran, hadith, and messages from both. This approach indirectly measuresstudents' ability to integrate religious values inthe context of science in everyday life. Each question is based on randomly selected biological material, so that students are testedevenly in understanding scientific concepts. The form of the question chosen is a long description, which gives students the freedomto explain their answers without certainrestrictions. Some questions are also accompanied by pictures and relevant information, which aims to enrich the question content and encourage students to think more deeply. In this way, it not only hones students' literacy skills in understanding content, but also broadens their understanding of the context and higher levels of cognition.

The results of students' answers to creative thinking skills questions are assessedand considered according to the rubric that was created previously. This rubric provides a clear reference for assessment criteria, with grade gradations that describe the extent to which students can meet the expected answerstandards. A score of one indicates that the student has not reached the expected standardin answering questions, while a score of two indicates that the student has potential but hasnot fully developed it to its maximum potential. Meanwhile, a score of three indicates that students have maximized their creative potential in answering questions.

Each question has a unique scoring rubric, reflecting the complexity and specific requirements of each question. This rubricincludes a gradation of ability that reflects thelevel of difficulty or complexity of the questions, as well as expectations regarding the level of creativity and depth of thinking expected from students. Using this rubric, researchers can accurately assess and compare students' answers from different schools, providing a comprehensive picture of students'creative thinking skills in a variety of contexts.

The results of calculating the average scores of the 326 students were then compiledand presented in a table to facilitate analysis and interpretation. This table presents information about average studentachievement in creative thinking skills, as wellas allows researchers to identify trends or patterns that may exist in the data. Thus, the results of this research can be presented in a systematic and structured manner, providing valuable insight into students' creativethinking skills and the factors that influence them.

The overall average score of 1.22indicates that the majority of students have notbeen able to develop creative thinking skills well, as indicated by the rubric used for assessment. This reveals that there are significant challenges in developing students' creativity, as confirmed through interviewswith teachers. From the interviews, the teachers said that honing students' creativity is a complex task and requires a lot of effort. Seven out of ten teachers revealed that they face difficultiesin inspiring students to think creatively. They stated that they felt the need to have more creative learning experiences themselves in order to create a learning environment that sparked student creativity.

Apart from that, three out of ten teachersalso said that they felt constrained by the demands of the school curriculum. They said that the lack of time available to explore the material made it difficult for them to develop creative learning approaches. Five out of ten teachers also admitted that they had difficultydeveloping material that was interesting and meaningful for students. They admitted that they often felt less confident in their ability to teach more effectively, because they were more accustomed to conventional learning methods.

These difficulties highlight the complexity of introducing creative learning approaches in school settings. Joint efforts areneeded on the part of teachers, school staff andother related parties to create an environment that supports and stimulates student creativity effectively. By understanding these challenges, schools can develop betterstrategies to improve students' creative thinking skills and promote innovative and powerful learning.

Results of Spiritual Quotient Questions

Spiritual intelligence questions are tested through a questionnaire that adopts a Likert scale with 4 gradation levels. The basicprinciple is that the higher the number, the higher the level of agreement or suitability with the student's circumstances. This questionnaire was designed by referring toZohar Marshall's indicators, which are relevant to the context of an Islamic religious-based educational environment in high schools. Data from 329 students was then collected and processed using the Excel application. The data processing processinvolves calculating the average of each questionnaire answer. The average results arethen presented in the following table.

The overall average score of 3.84 showsa fairly high overall level, when compared with the Likert scale used as a benchmark for assessment. A value of one indicates a very low level, two indicates a medium level, threeindicates a fairly high level, and four indicatesa very high level.

The existence of this value is also supported by the results of interviews with teachers in Islamic-based schools. They jointly stated that strengthening religious values had become an inseparable part of the curriculum in Islamic-based schools.

However, the cultivation of these spiritual values is still often limited to religious subjects such as fiqh, aqidah morals, the Koran and hadith, as well as subjects that are more often taught in Islamic boarding schools.In fact, at the high school level, the emphasis on religious values is limited to Islamic Religious Education (PAI) subjects, without being thoroughly integrated into the wider curriculum.

The internalization and integration of science and religion still faces many obstaclesin the field, as expressed by eight out of ten teachers surveyed. They admitted that they experienced significant difficulties in connecting the values of the Koran, hadith, and the values contained therein with the concepts of scientific material taught atschool. One of the main challenges they face is a lack of self-confidence because they feel they lack expertise in these two fields. As a result, they often only quote one or two versesof the Koran without being able to integrate them into science learning as a whole. They also revealed that they had not been able to develop learning that was truly internalized holistically.

Apart from that, teachers also complained about difficulties in translating and understanding Al-Quran verses using scientific explanations. Some verses require a deep understanding of interpretation before they can be connected to scientific concepts taught in school. This process requires time and deeper knowledge in both fields. Therefore, teachers feel that they are still far from achieving adequate integration of science and religion in the educational contextof schools. Efforts to understand and apply these two areas of knowledge together remain a significant challenge for them. Ideally, learning that is internalized andintegrates religion with science will not only result in improvements in students' creative

thinking skills, but will also obtain equally high scores in students' SQ (spiritual intelligence) assessments. If this process is successful, this will be evidence that teachers in schools have succeeded in overcoming the separation between science and religion. In practice, teachers will start teaching by referring to the arguments they take from the Koran, hadith, and the values containedtherein.

With this approach, students will not only gain a deeper understanding of science material, but will also see the connection between science and religious values in everyday life. The teaching and learning process will become more comprehensive andintegrated, so that students can develop their critical thinking in a broader context.

The success of this integration will alsobe reflected in the evaluation results, where students will show a significant increase in their understanding of science concepts and their

ability to apply religious values in the context of science. This will reflect a holistic approach to learning, where academic and spiritual aspects are treated as an inseparable whole. Thus, the integration of science and religion in learning will have a broad positiveimpact, not only for students' understanding ofconcepts, but also for their spiritual and moraldevelopment.

STREAM Approach is needed to Improve Creative Thinking Skills and SQ

The Science, Technology, Religion, Engineering, Art, and Mathematics (STREAM) learning approach offers acomprehensive solution to overcome the challenges of internalizing religious values in science material, increasing student creativity, and developing quality characters needed in the modern world. Within the scope of the STREAM learning approach, the integration of religious values into the STEM curriculum allows students to understand how religious values can be applied in the context of scienceand technology, as well as enriching their spiritual quotient.

Apart from the integration of religious values, the STREAM learning approach also emphasizes the use of innovative learning methods, such as problem-based and project- based approaches, which integrate various subjects. With this approach, students not only learn separately in subject silos, but are also given the opportunity to solve real problems through a collaborative approach involving aspects of science, technology, art and religious values.

Developing creative thinking skills isthe main focus in this learning approach (Rana Y. Khalil, 2023). Students are encouraged to think creatively in finding solutions to complex problems, including in the context of everyday life (Aytaç, 2021). By considering religious values and using a holistic approach, students can produce innovative and sustainable solutions to the challenges they face (Melati, 2023).

Through the STREAM approach, it is hoped that students can develop their creative thinking skills while deepening their understanding of religious values (Istiyani, 2022). Thus, they will become individuals who not only have strong technical abilities, but also have a strong moral character and are able to face thechallenges of the modern world with a positiveattitude and innovative solutions (Artayasa, 2020).

Conclusion

In the increasingly complex era of society 5.0, the STREAM (Science, Technology, Religion, Engineering, Art, and Mathematics) learning approach is very important. This article emphasizes the relevance of STREAM in developing students'creative thinking skills and spiritual intelligence (SQ), especially in facing the challenges of internalizing religious values in science, demands for high creativity, and the need for quality character. The integration of religious values in STEM through STREAM allows a deeper understanding of therelationship between science

and spiritual values in everyday life. Innovative approachessuch as problem and project-based learning inSTREAM provide students with opportunitiesto develop creative thinking skills holistically.By considering everyday contexts and religious values, students are expected to be able to create innovative solutions to complexchallenges, in line with the demands of society 5.0 which requires adaptability and creative problem solving. Therefore, the implementation of STREAM is very importantto support the development of students into individuals with strong technical skills andhigh spiritual and moral sensitivity, preparing them to face the challenges and opportunities in this dynamic and fast era.

References

Anderson, J. A. (2022). The Intersection of Spiritual Intelligence and EmotionalWell-being in Education. *Journal ofContemporary Psychology,* 112- 127.

Anna Shapiro, S.L. (2024). *Exploring Foundational Reading Skills Instruction in K–12 Schools.* RAND.

Artayasa, P.G., Susilo, H., Lestari, U., & Indriwati, S. (2020). The Effect of Science, Technology, Engineering, Arts, Mathematics (STEAM) Learning on Students' Critical Thinking and Creativity Skills. *Jurnal Pendidikan IPA Indonesia.*

Atsushi Deguchi, C. H. (2019). What is Society 5.0? Rules and Norms in theKnowledge-Intensive Society and information literacy. *Society 5.0,* 2-13.

Atsushi Deguchi, S.K. (2019). Society 5.0 and "Human Co-becoming": The Modern Humanity and Capitalism Based upon Things. *Society 5.0,*116-125.

Aytaç, T. &. (2021). Effects of Student-Centered Approaches on Creative Thinking Skills: A Meta-Analysis. *International Journal of Contemporary Educational Research*.

Chen, Y. &. (2024). Enhancing Creative Problem-Solving and Spiritual Intelligence through STREAM: Preparing Students for the 5.0 Society. *International Journal of Educational Research and Practice*, 55-70.

Clark, A. M. (2022). Empathy and Connection: The Role of Spiritual Intelligence in Understanding Others and Enhancing InterpersonalRelationships. *Spirituality and Well-being Journal,* 112-128.

Cyrille Feybesse, D.S. (2023). Creativity, Critical Thinking, Communication, and Collaboration: Assessment, Certification, and Promotion of 21stCentury Skills for the Future of Work and Education. *MDPI J. Intell*

Daniels, E.R. (2024). Creativity in the digitalage: Exploring the impact of digitaltools on creative processes. *Journalof Creative Behavior.*

Deguchi, A. (2019). From Smart City toSociety 5.0. *Society 5.0,* 43-46.

Deguchi, A. (2019). From Smart City toSociety 5.0: Integrating IT into Urban Planning to Smartify Cities. *Society 5.0,* 43-50.

Delaney, C. J. (2021). Measuring Spiritual Intelligence: New Approaches and Applications. *International Journalof Spirituality and Religion,* 51-67.

Edwards, L. J. (2023). Spiritual Intelligenceas a Mediator in Developing Deep Connections with Others and the Environment. *Journal of Positive Psychology and Spirituality,* 75-89.

Faulinda Ely Nastiti, AR (2019). IndonesianEducation Readiness to Face the eraof society 5.0. *Journal of Educational Technology Studies, 5* (1), 61-66.

Garcia, E.R. (2024). Developing Spiritual Intelligence: The Role of Self-awareness and Meaning-

making. *Journal of Psychology and Spirituality,* 75-90.

Garcia, M.E. (2023). Exploring STREAM Framework: Bridging TechnicalSkills with Creativity and Spiritual Intelligence in the 5.0 Era. *Journal of Contemporary Learning and Innovation,* 86-101.

Gladden, M.E. (2019, March 31). Who Will Be the Members of Society 5.0? Towards an Anthropology of Technologically PosthumanizedFuture Societies. *Sicety 5.0: Innovation, Uncertainty and Social Sciences,* pp. 1-39.

Goel, N. (2022). Foundational Literacy and Numeracy (NEP, 2020) - Urgency, Essential Skills, Challenges and TheIntegration of Key Areas. *IOSR Journal of Research & Method in Education (IOSR-JRME)* , 48-51.

Hideyuki Matsuoka, CH (2019). Habitat Innovation: the Social Issues. *Society 5.0,* 25-42.

Insights, D. (2024). *Creativity in the Workplace.* Deloitte United States.

Istiyani, D. &. (2022). The Role of STREAM-based Learning in Enhancing Creative Thinking and Spiritual Intelligence in Elementary School Students. *Journal of Primary Education*.

John E. Sawyer, G.M. (2020). The role of psychological empowerment in fostering creativity and innovation: A multi-level model. *Creativity Research Journal*.

Kumar, V. &. (2022). Streamlining STREAM: Innovative Approachesto Developing Creative Thinking and Spiritual Competency. *Journal of STEAM Education,* 102-118.

Lee, K. W. (2023). Spiritual Intelligence andIts Impact on Student Success:Evidence from Recent Studies. *Spirituality in Education Journal,* 89-104.

Li Hui, W. Q. (2021). Organizational identification perceptions and millennials' creativity: Testing the mediating role of work engagementand the moderating role of work values. *European Journal ofInnovation Management.*

Matthias Baer, G.R. (2020). Promoting Creativity at Work: Implications forScientific Creativity. *European Review*.

Melati, M. Z. (2023). Building Students' Creative Thinking Ability through STREAM-Based Learning in Middle Schools. *AIP Conference Proceedings*.

Moirano, S. Š. (2023). Developing Critical Thinking, Collective Creativity Skills and Problem Solving: A Systematic Review. *Journal of Intelligence,* 1-32.

NP Panigrahy, R.K. (2020). Creativity and Innovation: Exploring the Role of HR Practices At Workplace.*Presentation of Paper at National Conference organized by Ravenshaw B-School.*Visakhapatnam: Cuttack.

O'Reilly, M. &. (2024). Appreciating theWonders of Nature: The Interplay Between Spiritual Intelligence and Environmental Sensitivity. *Journal of Spiritual Growth and Development,*

58-73.

Palmer, C. A. (2020). Exploring the Role of Spiritual Intelligence in Psychological Resilience: A Review. *Journal of Spirituality in Mental Health,* 223-238.

Patel, R. S. (2020). Integrating STREAM in Education: Enhancing Creative Thinking and Spiritual Intelligence for the 5.0 Society. *Journal of Innovative Education andTechnology,* 45-60.

Peter Ellerton, R.K. (2022). Teaching, Assessing, and Learning Creative and Critical Thinking Skills in Education. *Education in the 21st Century,* 9-27.

Rana Y. Khalil, H. T. (2023). STEM-Based Curriculum and Creative Thinking in High School Students. *Education Sciences*.

Regina Moirano, M.A. (2020). Creative interdisciplinary collaboration: Asystematic literature review.*Thinking Skills and Creativity.*

Reynolds, A. &. (2021). The Impact of STREAM on Creative Problem-Solving Skills and Spiritual Awareness in Modern Education. *Education and DevelopmentJournal,* 78-93.

Sa, MJ (2020, November 23). Digital Literacy in Digital Society 5.0: Some Challenges. *Academic Journal of Interdisciplinary Studies*

, pp. 1-9.

Soila Lemmetty, K. C. (2020). The importance of creative problem solving in the workplace. *Journal ofCreative Behavior.*

Sunaina Shenoy, A.I. (2024). Phonics-Based Instruction and Improvement in Foundational Reading Skills of Kindergartners in the Indian Schooling Context. *Early Childhood Education Journal,* 73- 85.

Thompson, G. A. (2020). Deep Connections:Understanding the Role of SpiritualIntelligence in Building MeaningfulRelationships. *Journal of Spiritual and Religious Studies,* 34-49.

Vrije, AS (2020). Optimizing Employee Creativity in the Digital Era: Uncovering the Interactional Effectsof Abilities, Motivations, and Opportunities. *International Journal Environment Research Public Health.*

Williams, S.T. (90-105). Spiritual Intelligence and Nature Connection:Exploring the Impact of SpiritualAwareness on EnvironmentalAppreciation. *Journal ofEnvironmental Psychology,* 2021.

Yi Jiang, Q. W. (2021). Transformational leadership and employee creativity: A moderated mediation model. *Journal of Business Research.*