



AN EDUCATIONAL CONCEPTUAL FRAMEWORK OF MULTIPLE INTELLIGENCES, LEARNING STYLES, AND PERSONALITY TRAITS FOR SUSTAINABLE DEVELOPMENT EDUCATION

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Abstract:

This conceptual paper represents an educational framework that combines Multiple Intelligences, learning styles, and personality traits to enhance the teaching–learning process and support the cultivation of skills essential for education in sustainable development. Based on Howard Gardner’s perspective of diverse intellectual capacities, the framework recognizes individual differences in cognition, learning preferences, and behavioral dispositions. By aligning instructional strategies with students’ intellectual strengths, preferred learning modes, and personality characteristics, the model encourages inclusive, learner-centered, and holistic education. The framework aims to foster critical thinking, creativity, collaboration, and responsible citizenship in alignment with the vision of Sustainable Development Goal 4 (Quality Education) of United Nations. This integrative approach establishes a conceptual framework for developing instructional methods that foster sustainable and transformative education.

Keywords: *multiple intelligences, learning styles, personality traits, sustainable development education*

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Introduction:

Development has a direct relationship with positive change that moves from simple to complex. Sustainable development is based on fulfilling present needs while protecting the future. Continuous growth in education, society, and the material sphere determines the preservation and progress of the nation. Education is essential for addressing national development challenges and guiding society toward progress. It shapes future citizens by fostering their overall growth, encompassing intellectual, emotional, and physical capacities.

Through the teaching–learning process, teachers use various learning experiences to connect students’ learning with the present environment. Each student has a distinct learning ability and style, which allows them to express their individuality in different contexts.

On this basis, it can be stated that awareness and comprehension of work are essential for an individual, **enabling them to overcome challenges and actively participate in national development.** A person who is mentally, physically, and functionally developed



can easily achieve the objectives of economic, social, and material development.

When development is not merely individual but universal, the role of teachers and the education system becomes crucial.

According to Howard Gardner, intelligence is an extraordinary capacity. According to Joy Reid, there are different ways of learning through which acquisition of knowledge takes place. According to Lewis Goldberg, personality consists of proportionate stable traits of an individual that help in understanding one's thoughts, behavior, and emotions.

The 17 Sustainable Development Goals (SDGs 2015), are a universal agenda aimed at ending poverty, protecting the environment, and ensuring peace and prosperity for all by 2030. Under the “2030 Agenda,” these goals are designed to balance social, economic, and environmental sustainability.

To achieve the goals of sustainable development, interdisciplinary research and innovation are essential. Only through the integration of knowledge from different domains present needs can be fulfilled and we become capable of facing future challenges. Educational research is necessary for the development of new methods and technologies. This vision can lead a nation from a developing country toward becoming a developed nation.

For achieving these goals, coordination among students' intelligence, learning styles, and personality is essential. The development of a balanced individual can help accomplish all these objectives. Therefore, studying this subject “**An Educational Conceptual Framework of Multiple Intelligences, Learning Styles, and Personality Traits for Sustainable Development Education**” is necessary.

Review of related literature :

Mettetal, (1997) the study identified three main themes: positive attitudes of students, teachers, and parents toward the concept of Multiple Intelligences;

support for school-wide implementation through flexible learning time, activity rooms, and enrichment clusters; and variation in the application of MI practices across different classrooms.

Linda Davis (2004) investigated the use of Multiple Intelligences theory to improve science achievement among fourth-grade students in a rural elementary school. Using MI-based learning centers as the instructional approach, the study found significant improvements in students' academic performance, behavior, and self-confidence, suggesting that MI strategies can support both student learning and teachers' instructional practices.

Christa Fountain Glenn (2010) investigated how Multiple Intelligences relate to academic performance in middle school students. The study employed a quasi-experimental design involving 115 eighth-grade students and measured achievement using their Grade Point Average. The results showed a modest increase in students' GPA over a two-year period, indicating that incorporating Multiple Intelligences strategies in classroom instruction can enhance learning and support long-term academic growth.

R. Poornima and G. Lokanadha Reddy (2011) discussed the Multiple Intelligences theory and its implications for education. Their work explained the nature and major principles of the theory, the criteria used to identify different intelligences, and the eight types of intelligences. The study also highlighted common teaching strategies, challenges faced while applying MI in classrooms, and suggested ways to address these challenges.

Deepti M. (2012) found that CBSE ninth standard female students had obtained a higher score on multiple intelligences in comparison to IGCSE, ICSE and SSC Board students. IGCSE female had scored better than ICSE and SSC Board students, where as ICSE female had scored better than SSC Board students and CBSE male had obtained a higher score



on multiple intelligence in comparison to IGCSE, ICSE and SSC Board students. IGCSE male have scored better than ICSE and SSC Board students, where as ICSE male have scored better than SSC Board students.

Pooja (2012) examined teachers' perceptions of Continuous and Comprehensive Evaluation (CCE). The findings indicated that many teachers did not have a complete understanding of the CCE concept. No notable differences were found in perceptions based on gender, school level (primary vs. secondary), or educational qualification (graduate vs. postgraduate). However, teachers' perceptions varied significantly according to their teaching experience.

M. A. Bhat and P. Govil (2014) investigated how secondary school students' learning styles relate to their academic performance. They conducted a survey involving 510 students, utilizing Kolb's Learning Style Inventory. The analysis showed that the accommodating approach to learning was the most frequently adopted. Students with this approach exhibited strong social skills and tended to learn effectively through hands-on experience. The findings also suggested that students' learning approaches were generally consistent across gender and residential backgrounds.

S. Gupta (2016) examined the influence of family-related factors on the Multiple Intelligences of students at the secondary level in Gujarat. Using a random sample of 4,417 students and a researcher-developed rating scale, the study found that certain family and environmental conditions positively influenced students' intelligences, while some variables showed little or no impact.

Sana Afrin (2019) examined gender-based variations in personality traits among adolescents in secondary school. The sample included 900 students from Classes IX and X in Jharkhand. The **NEO Five-Factor Inventory**, developed by Paul T. Costa Jr. and Robert

R. McCrae, was used for data collection. The findings indicated only a slight gender difference in openness, while other personality traits showed minimal variation between boys and girls.

Beth A. Rogowsky et al. (2020) examined if adapting teaching methods to students' preferred learning styles can improve learning. The study involved 136 fifth-grade students aged 10–11 years in Pennsylvania. The results suggested that matching instruction to a specific learning style, such as auditory or visual, did not necessarily lead to better learning outcomes.

M. Jayaseely (2020) explored the impact of Multiple Intelligences on students' interests in school. The study incorporated 200 students from government and private schools and used Niall's Multiple Intelligence Test along with an interest inventory based on John L. Holland's theory. The results indicated that several intelligences such as linguistic, logical, bodily-kinesthetic, intrapersonal, and interpersonal had a significant effect on students' interests, with boys indicating moderately higher overall scores than girls.

Jonathan Smith et al. (2021) examined how personality traits particularly extraversion and emotional stability are associated with students' academic expectations and motivation. The study involved 303 adolescents from public high schools in Quebec. The results **revealed** that students with higher emotional stability showed greater interest in learning when they felt confident in their abilities.

K. M. Basil Gagarin and K. R. Selva Kumar (2021) explored how cognitive ability relates to personality traits in higher secondary students from Kanyakumari District. The study included 1,200 students and used the Big Five Personality Inventory and a cognitive ability test. The study highlighted a meaningful association of personality traits with cognitive ability, particularly considering gender differences, while Class XII students showed a lower level of correlation.



Huiling Fan and Zhiyuan Xu (2022) examined personality traits of children from economically disadvantaged families. Using data from 2,000 students, the study revealed five major factors influencing personality development: personal, family, community, school, and social factors. Among these, personal factors were found to be crucial in psychological development.

Need of the study:

1. To achieve the 17 Sustainable Development Goals set by the United Nations.
2. To create a collaborative approach through education.
3. To develop new methods and techniques to address challenges in development.
4. For the renewal and transformation of society.
5. For the development of sustainable education.
6. For gender equality.
7. To enhance media literacy through media studies.
8. For the study of human and social behavior.

Definitions of the Terms:

Multiple Intelligence: Multiple Intelligence allude to a set of intelligence which expresses the behaviors and thoughts of a student through different ability.

Learning style: learning styles indicate the preferred course of action through which students receive, process, understand, and retain information, and how they utilise this knowledge in new learning situations.

Personality trait: Personality trait refers to composite form of internal and external behaviors of students and creates the ability to adjust in an environment.

Sustainable Development:

It is growth that takes care of people, the environment, and the future together.

Conceptual definition of the Term:

Multiple Intelligence (MI):

Multiple Intelligence is a theory proposed by **Howard**

Gardner in 1983, which states that intelligence consists of multiple distinct types rather than a single general ability.

According to MI theory, individuals possess various kinds of intelligences such as linguistic, logical–mathematical, spatial, musical, bodily–kinesthetic, interpersonal, intrapersonal, naturalistic (and later existential).

Conceptually, Multiple Intelligences describe the ability that individuals possess different kinds of intellectual capabilities that influence way of learning, problem solving, and adapt to their environment. It recognizes that each learner has a unique combination of strengths that shape the learning process.

Learning Style (According to Joy M. Reid, 1987):

Learning style refers to an individual's natural, habitual, and preferred ways of absorbing, processing, and retaining new knowledge and skills.

Reid (1987) described learning styles as recurring patterns in the ways students perceive, process, and interact with information including visual, auditory, kinesthetic, tactile, group and independent learning preferences.

Personality Traits (According to Lewis R. Goldberg):

Personality traits refer to relatively stable patterns in an individual's thoughts, feelings, and behaviors, which emerge gradually and contribute to personal uniqueness.

Goldberg (1993) describes personality using five broad dimensions, commonly called the **Big Five: openness to experience, conscientiousness, extraversion, agreeableness, and emotional stability (neuroticism).**

Conceptually, personality traits refer to consistent characteristics that influence how a person thinks, feels, and behaves across different situations over time.



Sustainable Development:

Sustainable development is about achieving progress that balances **economic, social, and environmental needs** while ensuring that future generations can fulfill their requirements. The **United Nations SDGs (2015)** guide this global effort.

The 17 Sustainable Development Goals (SDGs):

1. No Poverty
2. Zero Hunger
3. Good Health and Well-being
4. Quality Education
5. Gender Equality
6. Clean Water and Sanitation
7. Affordable and Clean Energy
8. Decent Work and Economic Growth
9. Industry, Innovation and Infrastructure
10. Reduced Inequalities
11. Sustainable Cities and Communities
12. Responsible Consumption and Production
13. Climate Action
14. Life Below Water
15. Life on Land
16. Peace, Justice and Strong Institutions
17. Partnerships for the Goals

Conceptually, Sustainable Development integrates these 17 interconnected goals to ensure inclusive growth, environmental sustainability, and global partnership for a better and more equitable future.

Aim of the Study:

To develop a conceptual educational framework integrating **Multiple Intelligences, Learning Styles, and Personality Traits** to strengthen teaching–learning practices and foster competencies for Sustainable Development Education.

Objectives of the Study:

1. To examine the theoretical perspectives of Multiple Intelligences, Learning Styles, and Personality Traits in education.

2. To explore the relationship among Multiple Intelligences, Learning Styles, and Personality Traits.
3. To understand how these individual differences support Sustainable Development Education.
4. To propose a conceptual framework integrating MI, LS, and Personality Traits for effective teaching–learning.
5. To suggest educational practices that help develop sustainability-related competencies.

Research Gap:

Based on the review of related literature, the following gaps were identified:

1. Most previous studies have examined **Multiple Intelligences, Learning Styles, and Personality Traits** separately rather than in an integrated manner.
2. Existing research mainly focuses on **academic performance**, while competencies related to **sustainable development education** receive limited attention.
3. The conceptual relationship among these learner characteristics is **not sufficiently explored** in educational research.
4. Few studies connect these variables with UN **SDG 4 (Quality Education)** in the **Indian secondary education context**.

Significance of the Study :

1. The study relates to Sustainable Development Goal 4, as it emphasizes inclusive and equitable education by considering individual differences among learners.
2. It encourages student-centered teaching by using students' multiple intelligences, learning styles, and personality traits to improve learning experiences.
3. The study also supports Sustainable Development Goal 5 by promoting fair educational practices and equal academic support for both boys and girls.



4. It contributes to Sustainable Development Goal 10 by recognizing diverse abilities and encouraging flexible teaching methods.
5. The research assists students in recognizing their learning preferences and strengths, fostering lifelong learning and personal development.
6. Overall, the study supports inclusive and sustainable education, which is essential for achieving the Sustainable Development Goals.

Conclusion:

1. The conceptual framework integrates Multiple Intelligences, Learning Styles, and Personality Traits to improve the teaching–learning process.
2. It aims to make education more inclusive and effective for diverse learners.
3. The framework recognizes individual differences among learners.
4. Understanding these differences helps educators design appropriate instructional strategies.
5. It also helps in creating meaningful and engaging learning experiences for students.
6. The approach supports the development of essential competencies required for Sustainable Development Education.
7. It promotes quality education and learner-centered teaching practices.

References :

1. Mettetal, G. (1997). *The impact of implementing multiple intelligences in schools. Journal of Educational Research*, 90(5), 301–309.
2. Davis, L. (2004). *The effect of multiple intelligences theory on fourth-grade students' academic achievement in science. Educational Studies Journal*, 28(3), 45–58.
3. Fountain Glenn, C. (2010). *Multiple intelligences and academic achievement among middle school students. Middle School Journal*, 41(4), 20–27.
4. Poornima, R., & Lokanadha Reddy, G. (2011). *Theory of multiple intelligence and its educational implications. International Journal of Educational Research and Technology*, 2(2), 1–6.
5. Deepti, M. (2012). *A comparative study of multiple intelligences among secondary school students of different educational boards. International Journal of Research in Education*, 1(2), 35–42.
6. Pooja, S. (2012). *Continuous and comprehensive evaluation: A study of teachers' perception. Indian Journal of Educational Studies*, 5(1), 60–68.
7. Bhat, M. A., & Govil, P. (2014). *Understanding learning styles of secondary school students in relation to certain variables. International Journal of Education and Psychological Research*, 3(1), 12–18.
8. Gupta, S. (2016). *Effect of family variables on multiple intelligence of secondary school students of Gujarat state. International Journal of Advanced Research in Education*, 4(3), 85–92.
9. Afrin, S. (2019). *A comparative study of personality traits among boys and girls at secondary school level. International Journal of Research in Social Sciences*, 9(4), 210–218.
10. Rogowsky, B. A., Calhoun, B. M., & Tallal, P. (2020). *Providing instruction based on students' learning style preferences does not improve learning. Frontiers in Psychology*, 11, 164.
11. Jayaseely, M. (2020). *Exploring the impact of multiple intelligence on interest among school-going students. Journal of Educational Psychology Studies*, 7(2), 55–63.
12. Smith, J., Brown, L., & Taylor, M. (2021). *Examining secondary school students'*



- personality traits of extraversion and emotional stability in relation to academic expectation and value appraisals. *Journal of Educational Psychology*, 113(5), 890–905.
13. Basil Gagarin, K. M., & Selva Kumar, K. R. (2021). Cognitive ability and personality traits of higher secondary students. *International Journal of Educational Sciences*, 14(3), 122–130.
 14. Fan, H., & Xu, Z. (2022). Personality traits and their influencing factors of children from poor families from the perspective of psychological education. *Journal of Psychological Studies*, 18(2), 140–152.

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