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Integrating Innovative Pedagogy Based on the Multiple Intelligences Theory (MIT) and Study Skills for Sustainable Development

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ABSTRACT

Introducing new teaching strategies and methods into the classroom is known as Innovative Pedagogy. This proactive approach aims to improve academic outcomes and promote equitable learning by addressing real problems. Innovative Pedagogy involves studying the effects of innovative teaching practices on the learning processes. This new teaching paradigm is based on theories that can be practically applied in the classroom. Under this paradigm, students play an active role in constructing, discovering, adjusting, and extending their knowledge. The 2030 Agenda for Sustainable Development underscores the need to incorporate the principles of education for sustainable development (ESD) into all levels of education. ESD is an integral part of quality education, and all educational institutions should foster the development of sustainability competencies. NEP 2020 strongly believes that education should be child-centric, with the holistic development of each learner as a primary objective. The MI theory-based pedagogical strategy and approach to teaching also emphasize the need for modern education systems and pedagogical processes to incorporate varied teaching methods that promote holistic and sustainable development in both scholastic and non-scholastic ways. This descriptive study based on secondary data sources justifies the need to develop 21st-century skills in learners and teachers by adopting various MI-based teaching and learning strategies and approaches.

Keywords: Innovative Pedagogy, Multiple Intelligence Theory (MIT), Study Skills, Sustainable Development.

INTRODUCTION

"*Pedagogy is the heart of teaching and learning. Preparing young people to become lifelong learners with a deep knowledge of the subject matter and a broad set of social skills requires a better understanding of how pedagogy influences learning.*"

-Paniagua & Istance

Innovative Pedagogy

Innovative pedagogy refers to advanced and unique teaching methods that creatively use appropriate tools. Teaching is an art that is constantly evolving and varies from teacher to teacher, classroom to classroom, school to school, and platform to platform. To prepare young learners for the future world, it is essential to integrate innovative pedagogy into today's education system. The National Education Policy 2020 emphasizes the need for holistic, integrated, inclusive, enjoyable, and engaging learning. These techniques improve the effectiveness of the teaching-learning process and assist learners in meeting their learning objectives. Innovative pedagogy nurtures problem-solving, teamwork, reflective thinking, creativity, adaptability to change, information management and analysis, and working with knowledge. The COVID-19 pandemic has created a challenging educational situation, leading teachers, educational institutions, and policymakers to explore new teaching and learning approaches. The OECD 'Back to the Future of Education Study' emphasizes the need for innovation and growth in educational methods and practices. There is a desire to make our educational system and instructors more original and creative (OECD, 2020).

To effectively implement an innovative teaching approach, the following components must be incorporated:

1. Teaching methods should constantly evolve to meet the needs of learners in the 21st century.
2. The curriculum should be designed to meet future demands and prioritize helping students understand the material and apply it in real-world scenarios.
3. Engaging in classroom experiences requires implementing various study techniques and teaching strategies that promote interaction and discussion among students.
4. Enhancing learner productivity and inclusivity requires considering diverse evaluation methods. Technology can be incorporated into assessment and evaluation processes to allow students to self-assess.

Theory of Multiple Intelligences

This theory was introduced by the psychologist Howard Gardner almost 40 years ago, changed the way education is approached. In his book, "Frames of Mind" (1983), Gardner challenged the idea that standardized tests can only measure one type of intelligence. This theory has inspired educators worldwide to find more effective ways of teaching. It is crucial to identify the methodologies that define the different types of intelligence and help learners adopt appropriate learning methods to achieve sustainable development goals by focusing on knowledge, skills, attitudes, and values. Howard Gardner has continued to update the theory over the years, advocating for a range of distinct types of intelligence that go beyond the

traditional notion of intelligence. When it comes to Multiple intelligence, there are various types. These include several types of intelligence that people possess.

1. Linguistic intelligence, which is the ability to use language effectively.
2. Logical-mathematical intelligence, which involves reasoning and numbers.
3. Body-kinaesthetic intelligence, which is the ability to control bodily movements, such as in sports or dance.
4. Visual-spatial intelligence, which involves working with images and solving puzzles.
5. Musical intelligence, which is related to sound, rhythm, tone, and music.
6. Interpersonal intelligence, which involves communicating and relating to others.
7. Intrapersonal intelligence, which is related to self-knowledge and reflection.
8. Naturalistic intelligence, which is the ability to perceive and understand the natural world.
9. Existential intelligence, which involves deep concerns about human existence, such as the meaning of life, death, and origins.

Understanding the importance of these multiple intelligences in education is crucial. It is necessary to recognize the diverse abilities and talents of students beyond traditional academic skills. By incorporating multiple intelligences in teaching approaches, educators can enhance student engagement and promote a more inclusive learning environment. Valuing and accommodating different learning styles can help students reach their full potential and foster their personal growth. Ultimately, prioritizing multiple intelligences can lead to a more well-rounded and successful education.

Innovative Pedagogy and Uses of Effective Study Skills

Having effective study skills mean using various strategies to make the most of the time, materials, goals, academic abilities, time management, reading, writing, listening, planning, focusing, memorizing, retaining, retrieving information, skimming, note-taking, and exam preparation. These skills are essential for achieving academic success and reaching innovative pedagogical goals such as sustainable development goals. Effective study skills are fundamental to academic competence. According to **Pradeep et al., (2021)**, positive results are related with excellent study abilities across many academic topic areas and for varied learners. However, every learner's study skill may differ based on their unique interests, aptitudes, multiple intelligences, and learning abilities. According to a study conducted by **Hosseini et al. (2013),** study skills have an impact on academic achievement. The researchers wanted to look at the relationship between study skills and academic achievement in students, and they discovered that efficient study skills use can assist achieve pedagogical goals.

Education for Sustainable Development (ESD)

ESD is crucial in achieving a sustainable society. It should be incorporated at all levels of formal and non-formal education, as well as informal and informal education. ESD empowers individuals with the knowledge, awareness, values, skills, and actions necessary for economic feasibility and environmental integrity for both current and future generations. Pedagogy for environment-oriented learning should prioritize sustainability issues such as global warming, climate change, and other environmental concerns

outlined in the 17 SDGs. The Sustainable Development Education Panel Report in 1998 emphasized that ESD is about learning that sustains and improves our quality of life and that of future generations. It enables individuals to participate in decisions on how to improve the quality of life globally and locally without causing damage to the planet. The Council of the European Union in 2010 highlighted the importance of ESD in achieving a sustainable society. In 2014, UNESCO emphasised that ESD helps individuals to develop the skills, attitudes, and values required to construct a sustainable future. Climate change, catastrophe risk reduction, biodiversity, poverty reduction, and sustainable consumerism are all important themes for teaching and learning about sustainable development. Participatory teaching and learning methodologies motivate and empower students to change their behaviour and take action in the long run. ESD encourages critical thinking, predicting future problems, and making decisions together. ESD necessitates major shifts in present educational practises.

Significance of the Study

Education is going through major changes due to the combination of current technology, new teaching methods, and the creation of future learning systems. These factors are continuously driving education towards a new way of thinking. To make this change happen, educators, students, academics, and policymakers need to be leaders and agents of change. They must think past traditional norms and institutional rigidities to create a new ecosystem where education empowers learners in cognitive, emotional, physical, and spiritual ways. New teaching methods are constantly improving learning experiences for a better future. These approaches have the potential to guide teaching practitioners in transforming learning processes and achieving educational sustainable goals. **Ghaznavi (2021)** mentioned that the need of providing an appropriate learning environment in which all learners actively engage in the learning process and the teacher acts as a guide and facilitator was highlighted. The use of Multiple Intelligence theory can aid in the objective of engaging active learners in learning. The research also emphasises the significance of building 21st -century abilities in both students and instructors through the use of different MI-based teaching and learning methodologies. Many researches have proven the importance and applicability of MI theory in the educational process, demonstrating that it may aid in the achievement of sustainable development goals through creative teaching.

Objectives of the Study

1. To understand the concept of the innovative pedagogical approach.
2. To understand the concept of Multiple Intelligences Theory.
3. To understand the concept of Education on Sustainable Development (ESD)
4. To understand the importance of Integrating Innovative Pedagogy Based on The Multiple Intelligences Theory (MIT) and Study Skills for Sustainable Development.

Methodology of the Study

For the present study, the descriptive research method was utilized, gathering data from secondary sources. The researchers analysed a diverse range of sources, including books, journals, articles, research papers, UNESCO reports on sustainable development, NEP 2020 policy reports, Howard Gardner's Multiple

Intelligences Theory (1983 & 1999), and effective study skills techniques. Additionally, researchers also incorporated the views and ideas of philosophers and educationists, to gain better perspectives related to the study.

Importance of Integrating Innovative Pedagogy based on the Multiple Intelligences Theory (MIT) and Study Skills for Sustainable Development

The methods of education in the 20th century differed significantly from those in the 21st century. There was a shift from rote memorization to learner-centred approaches, theory to practice, teacher-centred to student-centred, and memorization to invention. This transformation has led to a change in teaching approaches and pedagogies, resulting in knowledge acquisition being transformed into knowledge creation. As a result, the role of a teacher has evolved to include imparting innovative pedagogical processes based on multiple intelligence and sustainable development.

1. **Integrating Innovative Pedagogy based on Multiple Intelligence Theory and the development of 21st-century skills**

The development of 21st-century talents in the next generation is prioritised by UNESCO and NEP 2020. Cooperation, information literacy, self-awareness, problem-solving, communication skills, critical thinking, and creative thinking are all essential for success in today's world. To build successful lessons for each student, educators must employ new pedagogy, such as that developed by MIT, and focus on rethinking learning to encourage 21st-century abilities. This will also improve their grasp of 21st-century curriculum objectives **(Markovi, 2019).**

2. **Integration of MIT and Study Skills as a Tool for Education towards Sustainable Development (ESD)**

ESD is an essential component of the 2030 Agenda for Sustainable Development, as it helps achieve all 17 SDGs. ESD empowers individuals to make informed decisions that benefit the environment, economy, and just society for the present and future generations. To address sustainable development challenges, ESD provides the necessary knowledge, skills, attitudes, and values. UNESCO's ESD learning objectives guide teachers, education planners, and experts in integrating ESD into classroom activities and multimedia resources for early childhood education through secondary education. Effective study skills are fundamental to academic competence, according to **Pradeep, Nivedita, & Supriya (2021)** positive results are related with effective study abilities across many academic topic areas and for varied learners. The National Educational Policy 2020 emphasizes the need for educators to adopt new teaching methods and techniques. Using MI Theory, which recognizes that all learners are intelligent but differ in the way they learn, can help teachers grow professionally while providing ample opportunities for learners to excel.

3. **The VAK teaching method is a modern approach based on the Learner's Needs**

The VAK teaching method is a modern approach to education. It categorizes learning into three areas: visual (seeing or hearing), audio (hearing or feeling), and kinaesthetic (moving or feeling). Each learner has a unique way of learning, and teachers should use a combination of teaching methods and techniques that cater to the needs of all three types of learners. Innovative pedagogies play a crucial role in creating a

conducive and dynamic learning environment. **Paniagua & Istance (2018)** identified six relevant innovative pedagogies clusters, which include:

1. Blended learning - a combination of face-to-face and online learning
2. Gamification - learning through play and games
3. Computational thinking - using logic and reasoning to solve problems
4. Experiential learning - practical inquiry-based learning in complex situations
5. Embodied learning - teaching approaches that focus on non-cognitive learning such as feelings and the body
6. Multiliteracies and discussion-based teaching - pedagogies that foster critical thinking and questioning related to sustainable development.

4. Role of a Teacher in Innovative Teaching-Learning Process

Engaging students and promoting in-depth learning can be achieved by teachers who use innovative teaching approaches. Incorporating technology and activity-based classrooms consistently can help with this. Skilled teacher is always looking to improve their teaching skills and incorporates innovative techniques and approaches. These strategies can help engage all types of learners. However, multiple intelligence schools may face challenges competing with the traditional education system, which has influenced pedagogical practices worldwide. As a result, educators are shifting from a focus on pure experience to mindful experience combined with reasoning. This pedagogy captures the essence of Generation Z and informs education in the twenty-first century. MI theory-based pedagogical approaches can help a broader range of students successfully participate in classroom learning, developing both 21st-century skills in learners and teachers.

5. Integration of MIT-Based Innovative Pedagogy Based on Modern Technology into Classrooms to Promote Sustainable Development

Integrating MIT-based Innovative Pedagogy Based on technology into classrooms can be an effective method to engage all types of learners and for sustainable development. Teachers can engage all students during class presentations with a little planning on topics such as climate change, disaster risk reduction, biodiversity, poverty reduction, and sustainable consumerism by using technology tools that cater to different types of learners

Here are some examples of how technology can be utilised to enhance lessons:

i. When constructing interesting classes, teachers can go beyond words and use graphics, visuals, gifs, 3D animations, models, and short video clips in addition to text related to various sustainable issues and concerns. This will appeal to children with verbal and visual-spatial intelligence.

ii. They can also employ real-life scenes rather than clip art to engage with those who learn by natural intelligence and relate to real-life learning.

iii. Teachers can employ instructional technology to differentiate classes and appeal to various sorts of learners. For example, although some students may learn well by reading a journal article,

others may require a 3D graphic accompanied by narration to grasp the topic related to sustainability. As a result, teachers can employ simple technology tools to combine many intelligences like visual, interpersonal and existentialism into their teaching.

iv. Music related to different themes of sustainable development can be played in the background as students engage in active learning to appeal to people who learn via music intelligence.

v. Technology tools can also be utilised to establish random groupings, allowing those who learn through intrapersonal intelligence to have diversity in a grouping.

vi. Teachers can provide challenging topics related to sustainable development goals, that students can study and solve using technology. This will appeal to individuals who learn logically and mathematically.

Conclusion

Several studies and reports have suggested that integrating innovative teaching practices and methodologies based on the MI theory can serve as an effective tool to achieve sustainable goals in the field of education. In order to develop a modern pedagogy employing the MI theory principles, curriculum framers need to provide their input, catering for the needs of every learner and fulfilling their 21st-century aims. **Kumar et al. (2021)** investigated the SDGs, which are comprised of 17 objectives and 169 targets. Agenda 2030 of the United Nations offers a comprehensive approach to accomplishing these goals by concentrating on humanity and the earth. **Herodotou et al. (2019)** presented six teaching and learning approaches that emphasized the importance of evidence in transforming educational practice. They also developed an integrated framework for selection, which could serve as an assessment tool for assessing specific pedagogical approaches. The agenda for sustainable development mentioned by UNESCO 2030 reinforces the significance of innovative pedagogical educational practices to achieve the Sustainable Development Goal. This is supported by **Haley (2004)** in a study that explored the application and suitability of multiple intelligences (MI) in shaping and informing instructional strategies, curricula development, and alternative forms of assessments. **Rajan (2015)** found that the MI theory is student-centred, encouraging the development of individual strengths and abilities. By incorporating an MI-based curriculum and teaching strategies, educators can cater to each student's dominant intelligence. **Bas (2016)** conducted a study that concluded that MI-based education positively impacts students' learning abilities and academic achievement. Therefore, by integrating MI and study skills, educators can develop flexible approaches to address a diverse audience with varying skill sets. Educators should take an active role in researching successful educational approaches in order to deliver comprehensive learning experiences with a multidisciplinary approach that meets the requirements of each individual. The incorporation of multiple intelligences in curriculum planning and pedagogy is vital for sustainable development through education. This approach should fulfil current needs while being forward-looking and supporting sustainable growth and pro-planet approaches.

References

[1]. Armstrong, T. (2000). *Multiple intelligences in the classroom*. Washington DC: Association of School Curriculum Development

[2]. Bas, G. (2016). The effect of multiple intelligences theory-based education on academic achievement: A meta-analytic review. *Educational Sciences: Theory & Practice, 16* (6), 1833–1864. https://doi.org./10.12738/estp.2016.6.0015

[3]. Cohen, D.K., & Ball, D.L. (2006). Educational innovation and the problem of scale. School of Public Policy, University of Michigan. http://www.sii.soe.umich.edu/documents/CohenBallScalePaper.pdf

[4]. College Quarterly Spring. (2011). Multiple Number Intelligence: The Most Effective Platform for Global 21st Century Educational and Instructional Methodologies

[5]. Etxebarria, B., Sánchez, F., Rojo, N., & Barona, A. (2022). Multiple Intelligence Informed Resources for Addressing Sustainable Development Goals in Management Engineering. *Sustainability*, *14*(14), 8439.

[6]. Fortner, S. G. (2004). *Examining pedagogical practices through brain- based learning in multiple intelligences theory*. Regent University.

[7]. Gardner, H. (1983). *Frames of Mind: the Theory of Multiple Intelligence.* New York, NY: Basic Books.

[8]. Ghaznavi, N., Narafshan,M, H.,Tajadini.M .,&Caputi,M. (2021). The Implementation of a Multiple Intelligences Teaching Approach: Classroom engagement and physically disabled learners, *Cogent Psychology, 8*(1). https://doi.org.10.1080/23311908.2021.1880258

[9]. Haley, M.H. (2004). Learner-Centred Instruction and the Theory of Multiple Intelligences with Second Language Learners. *Teachers College Record, 106*(1), 163-180.

[10]. Haley, M. H. (2022). Learner-Centred Instruction and the Theory of Multiple Intelligences with Second Language Learners. *Teachers College Record.* https://doi.org/10.1111/j.1467-9620.2004.00326.x

[11]. Hoerr, T. R. (2000). Becoming a multiple intelligences school. Alexandria, USA: Va.Assoc

[12]. Hernandez, J. V., Noruzi, M. R., & Sariolghalam, N. (2010). Multiple intelligences as a new paradigm in the education of Mexico. *International Journal of Education*, *2*(1), 5-16.

[13]. Herodotou, C., Sharples, M., Gaved, M., Rienties, B., Scanlon, E., & Whitelock, D. (2019). Innovative Pedagogies of the Future: An Evidence-Based Selection. *Frontiers in Education*, *4*. https://doi.org/10.3389/feduc.2019.00113

[14]. Hosseini, S. A., Jafari, S. Y., Charkazi, R., & Bakhsha, F. (2013). The relationship between students' study skills and academic achievement. *Iranian Journal of Medical Education*, *13*(1), 66-71. http://ijme.mui.ac.ir/article-1-2241-en.html

[15]. Kulkarni, D., & Khot, L. (2020). Innovative pedagogy. *International Journal of Scientific Research, 8*, 20-21.

[16]. Kumar, A., Sushil, K., Nirala, R., & Pardeep, S. (2021). "Role of Traditional Ethnobotanical Knowledge and Indigenous Communities in Achieving Sustainable Development Goals" *Sustainability* 13, no. 6: 3062. https://doi.org/10.3390/su13063062

[17]. Konst, P T. and Kairisto M, L. (2020). Developing innovation pedagogy approach. *On the Horizon*, 28 (1), 45-54. https://doi.org/10.1108/OTH-08-2019-0060

[18]. Organisation for Economic Cooperation and Development (2005) Oslo Manual: Guidelines for collecting and interpreting innovation data. (3rd edition) OECD Publishing.

[19]. Neethu, S & Rajan, S. (2015). Spiritual well-being and job satisfaction in teachers who adopt multiple intelligence methods in the inclusive classrooms. *Periyar University Journal of Psychology, 2*.

[20]. Paniagua, A, & Istance, D. (2018). *Teachers as Designers of Learning Environments: The Importance of Innovative Pedagogies*. Educational Research and Innovation. Paris: OECD Publishing. http://dx.doi.org/10.1787/9789264085374-en

[21]. Pradhan, P., Costa, L., Rybski, D., Lucht, W., & Kropp, J. P. (2017). A Systematic Study of Sustainable Development Goal (SDG) Interactions. *Earth's Future, 5*, 1169–1179. https://doi.org/10.1002/2017EF000632

[22]. Pradeep, C., Nivedita, B. M., & Supriya, A. (2021). An Observational Study on Study Skills among Medical Undergraduates, Bengaluru. *Annals of Community Health*, *9*(3), 125-128.

[23]. Towndrow, P. A., Silver, R.E. and Albright, J. (2010). Setting expectations for educational innovations. *Journal of Educational Change, 11*,425-455.

[24]. Vukadin, D. M., & Marković, S. N. (2019). Developing 21st Century Skills through Theme-Based Instruction and by Applying Multiple Intelligence Theory: Teacher Competencies

[25]. Muniandy, T., & Abdullah, N. (2023). A Comprehensive Review: An Innovative Pedagogy for Future Education. *International Journal of Online Pedagogy and Course Design (IJOPCD)*, *13*(1), 1-15.

[26]. https://en.unesco.org/themes/education/sdgs/materia

[27]. https://www.teachhub.com/teaching-strategies/2010/05/12-ways-to-teach- using-multiple-intelligences/

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